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HASTE AND ITS PENALTIES.

TO the experienced the creation of any "mushroom" industry forecasts inevitably, partial or complete failure. Nor could it be otherwise, for sudden growth entails ignorance of many vital points, and corresponding weak spots in the industrial structure. The motor-tire business growing up over night was a striking example of this. The history of most of the great and successful tire companies, from their beginnings, shows millions of dollars lost simply because the demand for goods was so great that they were forced to manufacture on a large scale without an adequate knowledge of the whole problem.

The same condition obtained in the planting of rubber. Hundreds of acres of Ceara were planted in the Middle East, and the trees destroyed as they matured, because the planters did not understand how to extract the latex profitably. Thousands of acres of *Castilloa* were planted in the Americas on soil not fitted for such culture, and millions of dollars were wasted.

In the great plantings of *Hevea* there has been the belief that, hasty though the work was, the penalty of the lack of knowledge and inadequate preparation, through sheer good luck was not to be paid. It begins to look, however, as if here also losses and disappointment are likely to be experienced. Within the last two years plantings supposed to be of *Hevea Brasiliensis* have been found to be a mixture of *Brasiliensis* and what appears to be a hybrid variety, practically valueless as a rubber producer. How far this extends none can say at present. The hybrid trees before tapping appear to the eye of the planter to be the thriftiest and best of their *Heveas*. When tapped, however, the product is a very inferior gum, and the quantity far below reasonable expectation. It is due wholly to government botanists that this type of tree has been discovered; and the planter of *Hevea*, present and future, should get in touch with them, so as to be able to recognize this type in seed, seedling and mature tree. Further, they should be able and willing either to destroy the tree wherever found, or else prevent its seeding and subsequent further distribution.

THAT TARIFF ON CRUDE RUBBER.

NOTHING further has been given out from Washington regarding the proposed tariff on crude rubber, which it was announced in February was under consideration in the scheme of revision on which Congress has been for some time so laboriously at work.

In the meantime, opponents of this measure, who include practically the entire American rubber trade, have not been idle; and if, when the rubber schedule is finally reached, there should be serious efforts to place a duty on importations of crude rubber, it will be met with vigorous resistance.

Washington reports had it that the duty on sugar was to be removed or substantially decreased, and this loss of revenue made up by duties on "silks, laces, rubber and other luxuries." This is certainly a whimsical classification. Lace is concededly a luxury. Silk may be similarly described without any serious perversion of language; but the only hypothesis upon which rubber could be so designated is the assumption that its only use is in the manufacture of tires for joy-riders—an assumption that disintegrates the moment it is analyzed. If rubber is not one of the necessaries of life, there are none. Admitting that a large part—let us say 45 per cent.—of the crude rubber that comes into our ports goes into tires; not a third of

that 45 per cent. goes into pleasure vehicles pure and simple. The commercial truck, so rapidly increasing in number, certainly escapes any suspicion of luxury. But even of the light passenger cars a comparatively small number serve solely to minister to pleasure. The doctor hurries to his patient in his runabout; the business man goes to office or to factory in his auto, and even the distinctively pleasure vehicle is put to serious uses much and often.

Then contemplate that other 55 per cent. of crude rubber imported into the United States, that goes into the miner's boots, the lumberman's "overs," the arctics and shoes that preserve the health of the nation; into the belting that drives the great factories, the humble packing that keeps the machinery tight and effective, the hose that fights the fire fiend, the hot water bottle that does the work, while the doctor takes the fee; the —but why go on? Rubber takes on a thousand forms that have become absolutely indispensable to the comfort, well-being, and usefulness of mankind. It would seem on the whole that rubber is quite as essential to a well-rounded civilization as sugar—at least as that very considerable volume of sugar that goes into the lollypop, for the destruction of the juvenile digestion, and the five-pound boxes of bonbons, which keep the youth of the land in a condition of perpetual insolvency.

GETTING THE EAR OF THE PRESS.

MR. MANDERS is a fortunate man. He has given the American press a new topic for discussion and started a newspaper item that will go on circulating automatically for months to come. We refer, of course, to A. Staines Manders, who organized so successfully the two London rubber expositions, and who is the organizing manager of the Rubber Exposition to be held in New York next fall.

When he arrived in port recently, to resume, on this side, the work of preparing for the big rubber show, which he has been carrying on so industriously on the other side, he was duly interviewed by the reporters of the metropolitan dailies. He gave them, out of the fullness of his store, much valuable and interesting information about the exposition, its purpose, character, scope and prospects; but what struck them in what might be called their news-center, and was duly recorded and rushed into the composing room, was an incidental observation that a scientist had analyzed the dust of city streets and found among other ingredients, that it contains about 12 per cent. of rubber worn off from tires. "A truly remarkable discovery," he added, "and probably we are actually swallowing rubber the whole day long. Are we on the verge of solving the problem of street cleaning? Perhaps. Might not a company be formed to keep the streets of New York clean, preserving the sole rights for extracting the rubber?"

This appealed to the newspaper men as something brand new and worthy of exploitation, and it was reproduced in many papers with varying comments. The New York "Sun," with its accustomed jocularity, began the story:

AERIAL RUBBER.

ALL YOU NEED IS A PROCESS TO COLLECT OVERSHOE REMAINS.

It then proceeded to speak of Mr. Manders, the coming exposition, dwelling chiefly, however, on "the 12 per cent." of street rubber.

The New York "American," with several headlines adequately displayed, devoted nearly half a column to the matter, while its Boston namesake seized upon Mr. Mander's statement as a text for one of those large type open-work editorials, often referred to as "rag time," vigorously attacking the present street cleaning methods and pleading for the day when all street dust shall be silently but surely wafted away through suction tubes. (Another use for rubber by the way.) Here are a few strong words from the Boston editorial:

> "Some gentle dreamer" (Mr. Manders, though hardly recognizable) "says that a fortune could be made out of the dust in the big cities by collecting it and extracting the rubber from it.
>
> "Twelve per cent. of the city dust, according to the hopeful visionary, consists of rubber worn from rubber tires and rubber pads on horses, and a large fortune could be made for the city by putting this dust through a rubber refinery and getting the rubber back for commercial purposes.
>
> "What is more important than the money-making dream of the scientific gentleman is his statement, 'Few people realize that they are swallowing rubber with every breath as they walk through a dusty thoroughfare.'
>
> "That is quite true."

And thence it plunges, as remarked above, into a ringing argument for vacuum street cleaning.

When the echoes of this interview had reached the rural sanctums, where there is not quite the rush and hurry under which the city dailies go to press, and where there is more time to examine the psychological and ethical aspects of a question, it was discovered that this 12 per cent.—which by that time had increased to 18 per cent.—of rubber floating in the air

had a significant moral bearing. Here are a few lines from a Worcester paper:

> "Throwing away millions of dollars worth of rubber in street sweepings, is the latest British indictment of American extravagance. It looks like an elastic joke at the first glance, but the English are not jokers in that class. A. Staines Manders has arrived from London with his pockets full of rubber and rubber plant seeds, and he is going to make ready for a big rubber show in New York in the fall. Manders claims that it has been shown by chemical analysis that 12 per cent. of the dust in city streets is rubber from auto tires and other wheel rims, and 6 per cent. more from rubber boots and shoes. That makes 18 per cent. of rubber in street dust, and rubber is worth from 70 cents to $3 a pound. Manders suggests that in the future a company might be formed to keep the streets of a big city clean for the right to extract the rubber from the sweepings. That would save New York at least $100,000 a year, or might if the graft of Tammany were not more elastic than the rubber. And there may yet come among us a theorist to claim that the conscience of man becomes much more elastic because of breathing in so much rubber dust of cities."

All of which goes to show that the royal road to journalistic attention lies not so much through the generous distribution of informing facts and instructive figures as through the casual dropping of some remark that is altogether novel and, preferably, rather startling. The makers of newspapers believe that their readers are not looking so much for information as they are for surprises. They want a jolt. Hence the wisdom of Mr. Manders and his new solution for the great street cleaning problem. Several million people will now hear about the New York Rubber Exposition who in the ordinary methods of disseminating information might never have been reached.

NEW JERSEY RUBBER INDUSTRIES.

NEW JERSEY can justly claim the position of precedence in the form and completeness of its industrial statistics, compiled under the direction of Hon. Winton C. Garrison, Chief of the Bureau of Statistics of New Jersey. While the necessarily slow machinery of the national Census Bureau is still coping with the quinquennial figures of 1909, collected in 1910, the various points of the New Jersey annual industrial census of 1911 dealing with the results of 1910 have already been issued in complete form; the figures affecting the rubber industry being summarized in another column.

One interesting fact is disclosed by this compilation, namely: that an increase of nearly 15 per cent. in the value of the product has been effected with only about 1 per cent. augmentation in the horsepower used. The more economical use of power by New Jersey rubber factories is thus demonstrated.

ARBITRATION ON CANCELLATION OF ORDERS.

AMONG the most annoying sources of loss to a manufacturer is the failure of a buyer to keep the engagements on the strength of which the maker has undertaken special liabilities of an onerous character. Such is particularly the case in the cotton industry, where, in place of the manufacturer laying in his crude stock in bulk, and using it as required, the usual course is for each important sale of fabrics to be covered by a special purchase of raw material, in stock or for later delivery, at the price then current. The whole deal thus forms a chain of transactions, based on each link performing its allotted work. When the final link, acceptance by the buyer, snaps, the whole object of the chain is defeated and what was prospectively a profitable deal turns out just the reverse.

How to treat such a cancel, formed the subject of a valuable paper read at the 1911 meeting of the National Association of Cotton Manufacturers, by Mr. R. M. Miller, Jr., of Charlotte, N. C., president of the Elizabeth Mills, and one of the leading Southern authorities upon the cotton manufacturing industry. Mr. Miller pointed out that the acceptance of any one of the existing legal alternatives involves expensive legislation, long delay, loss of business and considerable worry of mind. As a counter remedy he suggested a greater respect for the moral obligations involved in a contract, and as a practical measure, arbitration by a committee of experts in cotton manufacturing processes, to which body all questions of differences between buyers and sellers should be referred. This board would consist of one member each from The National Association of Cotton Manufacturers, American Cotton Manufacturers' Association, Arkwright Club and National Association of Hosiery Manufacturers; as well as a member representing commission merchants, converters, dry goods and yarn dealers, etc.

To use Mr. Miller's own words:

"A verdict rendered by such a board would be more satisfactory and conclusive than if rendered by a jury of any twelve men, ignorant, possibly, of the details of construction and intricacies of manufacturing; their verdict is often arrived at by personal like or dislike, or more probably guess work."

How far such a plan would be adaptable to the rubber industry is an open question, but the principle suggested by Mr. Miller seems to merit, at least, fitting consideration.

AVIATION AND RUBBER.

TO the popular fancy aviation is still only a circus enterprise—spectacular not commercial. The present mental picture of the public is of scores of inventors working over their plans while the actual flights are experimental under governmental supervision or in the interest of county fairs and boom towns. And also when we speak of the commercial development of a proposition it is apt to conjure up an elaborate picture of freight and traffic uses, and here, of course, the flying machine can hardly hope to enter, as an economic factor. Kipling's skilful story of "The Night Mail," where a flying machine has developed all the capabilities of the present great ocean steamers is not a likely probability. The roadbed and right of way for heavy traffic furnished by the solid—or liquid—earth will always retain their functions; yet it is idle to hold that the mastery of the third great natural element should not contain as great a commercial potentiality as the other two. Its function will be different but equally valuable to our economic existence.

The mastery of the air is so new that its possibilities and method of exploitation are even yet hardly emerging from the speculation of the purely imaginative writer. With the first accomplished flight the world held its breath. Man can fly—splendid! We will have an aviator out in the new suburbs, draw a crowd and sell some "own-your-own-home" lots. Next—what a splendid weapon! Now we can drop a few bombs on our fellowman from a point he cannot guard against; thereupon a few millions are tossed into the war-budget for the purpose of devising a heavy shot-gun that will pot the aviator in the act; or, should he be operating a dirigible, that will explode his gas bag and consume him in its hot flame before the earth is reached. It is inconceivable that man's final conquest of flight holds no more than this for the world.

We are still in amazement that it is actually possible for a man to fly at will and almost under any conditions. The automobile has developed so logically, by the processes of adding two and two together, that when the final achievement was reached a thousand uses were prepared and ready to take advantage of it. But the field of aviation shows no such parallel. From the days of Icarus to the even better known Darius Green human flight was looked upon as a subject for the hardly plausible imaginings of literary fancy and its actual and practical attainment as reserved for angels.

The death of Lillienthal in Germany during his experiments with gliders is within the memory of young men whose recent shaving days were begun with a safety razor. Octave Chanute, who worked along the same lines in this country is still among us, a young-old man; and Professor Langley's epoch-making, automatic flying contrivance that was fished out of the Potomac after its proving achievement is a memory of less than two decades. Yet in none of these really very recent efforts was there actual practical flight.

And then came the Wright brothers, the men who first actually flew and who at last accomplished the impossible while operating in the unknown. From that date only does the real history of flying begin. There were boys in school in those days who read about and scanned the rough newspaper photographs of the machine who are only now just entering college. It is all so very recent.

Thus it was that on one day less than a decade ago the air was an unconquered domain, and the next day human flight was an accomplished fact. The elemental problem had been solved, practically overnight, and the rapid march of practical and commercial development had commenced. Compare it with the slow development of the steamship, the railroad or the submarine. In 1903 Wright flew for fifty-nine seconds—marvelous. Only eight years later Fourney flew for over eleven hours—an achievement over *six hundred and sixty times greater!* In those early days Santos-Dumont flew *eighty* yards and France was deafened with the noisy acclaim. In 1911 Gobé flew over four hundred and fifty-nine miles, or over *ten thousand times as far!*

It was a marvelous fact that a man, one single man could fly at all in a heavier-than-air machine; yet since that initial achievement of Wright's of sustaining himself in flight for fifty-nine seconds an aviator has remained in the air with three passengers for over one hour. Such progress is along practical, commercial lines and points unmistakably to a commercialized future rather than to the earlier, conservative views of a sport or circus "stunt," and the limited field of the purely spectacular.

In comparison with the ordinary crusted slowness with which governments officially interest themselves in new and radical inventions is the avidity with which the aeroplane has been seized upon. England and the United States alone among the great powers seem to be working slowly and with an unprogressive caution.

The great amount of attention that France is giving to this new branch of warfare, is indicated in the remarks made in a recent discussion of the national war policy in the French senate by Senator Alexander Millerand who outlined the aviation program of the government, for which from $4,500,000 to $5,000,000 yearly is asked. Fifteen dirigibles, he said, would be constructed, but the special arm of France was the aeroplane. This year the army could mobilize 334 aeroplanes, divided into 27 squadrons and manned by 344 officer pilots and 344 observers. An aeronautic regiment is also to be constituted.

Russia has started in with a fleet of 300, and has appropriated 4,500,000 dollars for the purpose of further developing military aviation. Germany has apparently

for years been pinning its faith to the dirigible balloon, generally of the Zeppelin type, and so far has only a moderate fleet of some 100 aeroplanes; but this is steadily being increased. She is also increasing her staff of flying men by schooling them in batches of fifty at a time, which is an indication of a heavy increase in this branch of aviation. Italy, Austria and Spain are following, and the Italian conquest of Tripoli has given the Italians the first opportunity to use the aeroplane in actual warfare.

In addition to these military planes there is a vast number of aeroplanes being continually manufactured for private persons. Almost every daily paper carries cables from countries all over the world detailing flight and the breaking of new records for distance, speed or passenger carrying. The manufacturing of parts and fabrics and appliances has grown, in a few brief years, to most respectable proportions. At the beginning of this year, in the United States alone, there were 324 companies devoted to the aeroplane and aviation industry. Of these many are manufacturers of parts or aeroplane motors, fabrics and balloons, but of those who devote themselves solely to the manufacture of aeroplanes there are 129 manufacturers.

The United States has six magazines devoted to aviation, while over fourteen are published in Europe. At the beginning of this year there were in the United States alone over 100 licensed aviators plying their rather hazardous calling. In the international aviation organization, known as the Federation Aeronautique Internationale, there are sixteen clubs representing, the United States, France, Germany, Holland, Belgium, Denmark, Norway, Sweden, Great Britain, Spain, Italy, Austria, Russia, Switzerland, Hungary and the Argentine Republic. In each of these countries are numerous local aviation organizations and societies. There are probably, all told, including small with large, about 75 aviation clubs in the United States. Twenty-five of these are important clubs, incorporated and affiliated with the Aero Club of America, located in New York, which is the oldest and largest of them all, with a membership of 555.

The aeronautical exhibition of Paris is a regular institution. In their exhibits a little over a year ago between 60 and 70 firms exhibited complete flying machines while the total number of exhibitors of accessories and parts totaled over 300. And one remarkable fact stood forth, all the stronger when it is recalled how few the years since Wright made his fifty-nine-second flight, while all the rest of the world was still in the stage of early tentative and unsuccessful experimentation—there were no experimental machines or aeroplanes in the exhibition. There were none that had not gone through the experimental and actual tests and none that had not actually flown before being exhibited. It was, in fact, a thoroughly commercial, trade exposition. As indicating the general interest in this country in aviation, mention should be made of the International Aviation Exhibition that will be held from May 9 to 18 next in the Grand Central Palace, New York.

There are today in this country 20 manufacturers who have devoted their energies to balloons; these range from the old-fashioned hot air and gas balloons of the spherical type on up to the modern types of the dirigible. Fourteen firms confine themselves, according to the Aero Directory, to dirigible balloons. Eighteen firms are engaged in the manufacture of balloon and aeroplane fabrics. Eight firms manufacture parachutes, and six firms are listed as engaged in the manufacture of wheel rims for the underbody alighting gears of aeroplanes. Five companies design and make these alighting gears complete. Two firms are marketing aeroplanes without engines, and twenty-two are manufacturing and selling aeroplane parts. Four houses are listed as manufacturing special bumpers (rubber) and six more offer special shock absorbers, and as we have said above, 129 manufacturers in the United States are manufacturing aeroplanes, complete. Thirty-one firms manufacture gliders; four construct hangars, that is the aeroplane or dirigible garage; one manufactures a special aeroplane gyroscope; four construct hydrogen gas generators for dirigibles and balloons, and thirty-nine make models of flying machines, while fourteen supply model builders' supplies for the model machines for inventors and amateurs. Seventy-six manufacturers of motors are offering special aeroplane and dirigible motors.

Fifty-four design and manufacture aeroplane propellers; six, aeroplane skids for their landing gearing; four, steering gears; eight, steering wheels; sixteen, tires for the starting and alighting wheels; seven, specially drawn or braided wires and slender cables for the aeroplane braces and gearing, and twenty-five manufacturers have special varnishes solely for the treatment of balloon, dirigible and aeroplane fabrics. These figures cover only that portion of the trade list that deals directly with aviation and do not consider the indirect accessories such as castings, forgings, magnetos, lubricants, alloys, etc. And yet these latter also benefit from the natural radiating influence of these new commercial developments. This, moreover, is only for the United States; in Europe the trade is developing with quite as much, if not even a greater, energy and rapidity.

Certain of the standard aeroplanes, or, in fact, all of the designs, today have a direct trade interest for the rubber manufacturers. The alighting devices and under gearing all now depend upon wheels—a pair of suspended bicycle wheels with their pneumatic rubber tires, but designed according to the special requirements of this service. Here we note that fourteen American tire manufacturers are listed as supplying aeroplane tires. All of these and several others also manu-

facture rubber bumpers or shock absorbers for flying machines. These are the more obvious and immediate phases that connect the field of aviation with the rubber interests.

But in another direction there are marked signs of an important and new development; this is in regard to the fabrics used in covering the wings of the aeroplanes and in the covering envelope for the gas bag of the dirigibles. Heretofore these fabrics, usually of silk, were carefully treated with certain varnishes until they became as gas-tight as it was possible for human skill to make them. Each balloon manufacturing plant had its own carefully-guarded formulas for these varnishes and treatments, and for a long time this branch of the industry was more closely connected with the paint and varnish trade than elsewhere. In fact, the five manufacturers of varnishes and compounds for treating the fabrics of aviation are, with one exception, all closely allied or identified with the paint and varnish industry. This exception is a rubber company which manufactures varnish for an "aero cloth."

This tendency is more strongly emphasized by the fact that four rubber companies are manufacturing a fabric for aeroplanes and balloons, and one importer advertises a "rubberized" fabric for similar purposes. From England comes a booklet from a great rubber company in which they call attention to their two lines of rubber-proofed cloth, one an aeroplane fabric, and the other a balloon cloth. They cite a number of aviators and balloonists, headed by Mr. Grahame-White, who have used this rubber-proofed fabric, with the most satisfactory results. After its use for a week in a dirigible, that remained inflated during that time, it was stated that the loss of gas was but one-half of that which had occurred during a similar period in a previous dirigible of different fabric. The actual loss of gas was but one-half, although the capacity of the dirigible was one-third greater. Certainly a most satisfactory improvement and one that indicates that rubber and rubber products are in the field of commercial aviation to stay.

Mr. Grahame-White was similarly pleased with the use of the rubber-proofed fabric in his aeroplanes and plans to have it used on a number of new machines which he is designing.

The Continental Caoutchouc & Gutta Percha Company, of Hanover, Germany, also are in the market with a Continental Balloon Sheeting for which they claim the highest degree of gas tightness and breaking strength. Captain Thomas S. Baldwin is also out with a vulcanized proof material which he claims to be the first rubberized aeroplane material on the market. For this fabric he claims the greatest advantages for aviation use. Heat and cold have no effect upon it and it is not open to the dangers that attend stretching, shrinking or cracking. Glenn H. Curtiss now uses a rubberized fabric on all his aeroplanes, while our government has also used and is using it in the governmental dirigible and spherical balloons of the U. S. Signal Corps. Despite the weight of rubber as compared with other substances used in earlier days the weight of the cloth can be kept down and such a cloth can be made in a weight of only three ounces to the yard. Of course, where conditions permit, the weight can be increased for harder usage.

Such has been the progress of aviation in the commercial field. Less than ten years ago it was a non-existent factor, or at the very best was commercial only to the extent of laboratory experiment and the slight needs of scattered inventors and experimenters; now it is a manufacturing business covering a wide field in the world of trade. The conquest of the air was among the things unknowable and impossible. Then the heavier-than-air machine was a mechanical impossibility while the dirigible, an advance upon the helpless, drifting balloon, was still in a state of fragile helplessness whenever there was the slightest atmospheric disturbance. In those same recent days a few small factories were ample to supply balloonists with their gas bags for ascensions at county fairs and suburban lot sales. The only mechanical problem before which man stood helpless lay in the atmosphere above us. Steamships had reached the stage where successive improvements lay only in adding size and luxurious equipment; submarines were a regular part of every first class naval power—and many of lesser dignity. They had even reached an approximation of Jules Verne's imaginary "Nautilus," and only the air remained as virgin a field as it was in the Biblical days—"Yea, four things I know not: The way of an eagle in the air; the way of a serpent upon a rock; the way of a ship in the midst of the sea; and the way of a man with a maiden."

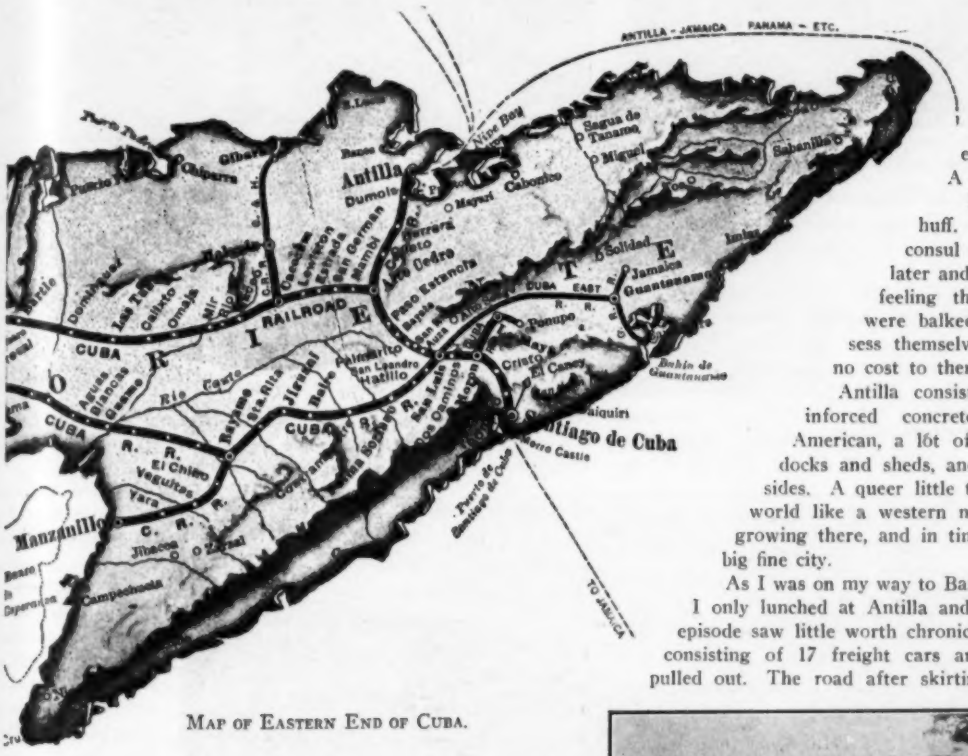
Long since the naturalists had solved the way of the serpent on the rock; engineers had mastered the problem of ocean navigation; and the way of a man with a maiden, while it may not have reduced itself to terms of a general philosophical formula, yet had apparently resulted in some kind of practical arrangement eminently satisfactory to all parties; only the eagle in the air remained as the insoluble factor. And a few years passed, less than a decade, and the flight of the eagle in the air has become numbered among man's practical achievements. And out of this latter is already growing, in fact has grown, a great industry which in its turn has reached out and stimulated and extended other activities. It is growing faster than its records can be set down and tabulated. The compiled statistics of to-day are absolete or conservative almost before they are read in the published page of to-morrow, and yet, with all this growth, it is even now only in the nursery of its career.

Castilloa in Cuban Valleys.

By the Editor of "The India Rubber World."

Cuba from the East.—Grasping Customs' Officials.—Santiago and the Casa Grande.—On Board the "Habana."—Along the Coast to Guantanamo.—Beautiful Baracoa Bay.—In the Footsteps of Columbus.—Into the Wilderness on Horseback.—Cocoanuts, Cacao and Castilloa.—Days of Exploration.—Down the River.—A Night Ride Along the Beach.—On Board the "Gibara."

I HAD visited Cuba a number of times, but had always entered by the front door, that is through Havana, and had a feeling that perhaps I did not get that intimate knowledge of the island that might come through a less usual mode of approach.



MAP OF EASTERN END OF CUBA.

It was, therefore, with a lively anticipation of happenings of interest and perhaps adventure, that we entered beautiful Nipe Bay at the far end of the island and headed for Antilla, the new commercial port of the railroad and steamship lines. The big boat anchored far out and a small tender took passengers and baggage to the pier. The former were allowed to wander at will but the baggage was piled in real Cuban confusion in a small slat-covered inclosure. And there my troubles descended upon me. The courteous captain of the steamer assured me that there would be no trouble with customs, that the company's resident agent, to whom he introduced me, would see me through. But the customs men ransacked my things; broke fragile curios; spent half an hour discussing whether or not a sawfish jaw was a weapon of war, and finally took my heavy service revolver from its worn holster and decided that it must be sent to Havana. I then sought the agent in his office, who kept me waiting half an hour, while he fussed with some papers. Finally he listened to my story and said.

"Well, I have had no lunch yet. You would not wish me to go without lunch, would you?"

At last fifteen minutes before my train left for Santiago, I hunted up the American consul who took hold promptly and said he would have the revolver for me ere long. Then when I was seated in the train the steamship agent appeared and said he could do nothing.

"Very well," said I, "But I am going to have that revolver. It has been in use for 20 years. I am a tourist in transit and you know that the customs had no business to seize it. If it isn't produced I shall appeal to our own State Department."

"Then I shall withdraw from the case," was the dignified reply.

"Withdraw!" was my amazed ejaculation. "You cannot withdraw. You have not even gotten into the affair. A dead man cannot die."

He stalked off in a huff. To end the incident, the consul got the revolver for me later and I had the satisfaction of feeling that the customs officials were balked in their effort to possess themselves of a fine weapon, at no cost to themselves.

Antilla consists chiefly in a fine reinforced concrete hotel, modern and American, a lot of railroad and steamship docks and sheds, and a series of barren hill sides. A queer little town, looking for all the world like a western mining settlement, is fast growing there, and in time it will doubtless be a big fine city.

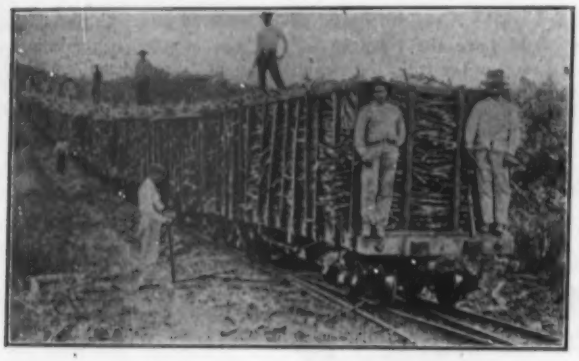
As I was on my way to Baracoa by way of Santiago I only lunched at Antilla and except for the customs episode saw little worth chronicling. At 4.30, our train, consisting of 17 freight cars and 2 passenger coaches, pulled out. The road after skirting the bay ran through

RIO DE MIEL (HONEY RIVER.)

jungle for miles, with an occasional settlement, the center of a sugar estate or a lumber camp.

At 6.30 we stopped at Alto Cedro for dinner. The railroad

restaurant was run by a thrifty Chinaman, who gives the traveler all he can eat in twenty minutes for an American dollar. He also makes it easy for the eater to hurry. At each place is a stack of six plates. Throughout the length of the wide tables are stacked huge plates of chicken, ham, beef, beans, cakes, pies and



Train Loads of Sugar Cane.

Looking Down on Santiago.

doughnuts, and the way viands disappear is astonishing. In the midst of our meal the through train from Havana to Santiago steamed in and we got aboard for the last section of the railroad journey. This train was equipped with Pullman cars and was thoroughly comfortable. The roadbed was also good and we ran smoothly through many thrifty looking villages and finally reached the narrow pass of the Christo and slid down the steep hill to Santiago. The big stone station was crowded. Ignoring much native advice as to the various hotels, I chose the Casa Granda and in a big barge pulled by a couple of hard galloping mules, was soon jolting up the steep crooked streets to the business and residential part of the city. To my surprise I was welcomed at the hotel by the proprietor, who had formerly been head waiter in a well-known French restaurant in New York. He recognized me, and thereafter the best that Santiago afforded was mine. I should like to pause here and dwell upon the beauty of the old city, on the visits to San Juan Hill and the other battlefields, to comment upon the queer mingling of American and Cuban customs, moneys and sports; but after all my objective was Baracoa and *Castilloa*, so I must perforce refrain.

Entrance to Santiago Bay, where the Merrimac Sank.

Perhaps I should make it plain that I had heard of certain sheltered valleys at this end of the island of Cuba, where rubber was already flourishing, having been planted by some of the wealthy cocoanut growers. What the rubber was no one seemed to know. Indeed, as I looked at the barren hills surrounding Santiago I could think of no rubber tree that would be likely to flourish there unless it were the *Manihot*. I knew little of Baracoa beyond the fact that it was the first capital and the oldest town on the island. It was out of the track of the tourist and few Americans or even Cubans seemed to have been there. I finally engaged passage on a Cuban steamboat that ran from Santiago to Havana stopping at many ports *en route* including that which I sought. Awful tales of dirt, garlic and discomfort were passed out to me by a couple of American drummers who had travelled on the same boat. As usual the tales were fictitious. I found the *Habana*, although very small and incredibly slow, clean, well-found, and handled by Spanish-speaking officers, who were most dignified and courteous.

We sailed at nine in the morning, out through the beautiful land-locked bay and the narrow and crooked channel where the *Merrimac* was sunk, by grim Moro Castle and then followed the coast. At four that afternoon we ran into Guantanamo Bay where three American battleships lay at anchor. After discharging a little cargo and taking on a little more, we steamed out again and continued along the coast. It was very calm and clear and warm, and so bright a moonlight night that we stayed on deck very late, watching the dim shores slip slowly by. When we awoke the next morning we were off the rugged and very picturesque shores of Baracoa. A little later we entered a narrow passage in a reef and dropped anchor in a tiny oval harbor on the steep encircling slopes of which lies the city. Back of it and visible out to sea for miles towers a great mass of rock, 2,000 feet high known as "Yunque" the Anvil.

Here "Don Angel" met us with a carriage and boys to carry the luggage and conducted us to "El Siglo XX" Hotel, which as anyone would guess means the Twentieth Century Hotel. This hotel was thoroughly Spanish. Our rooms fronted on a

broad balcony, that overlooked a tiny plaza, where we took all of our meals. The delicious quaintness of this town was

HARBOR AND BOAT LANDING, BARACOA.

indescribable. The streets were most ingeniously ill-paved except for a stretch of about 300 yards that was smooth asphalt. This was laid by a former reform mayor (in front of his own residence) and the townspeople point to it with much pride. Carriages were few, as a mile or two outside of the city only trails existed. Nearly everyone rode horseback and there were many fine horses, beautiful trappings and dashing and graceful riders. As the country is mountainous, bullocks, most surefooted of beasts, are used instead of pack horses. They are big black fellows often gaily caparisoned and much more picturesque than any other pack animals that I have seen.

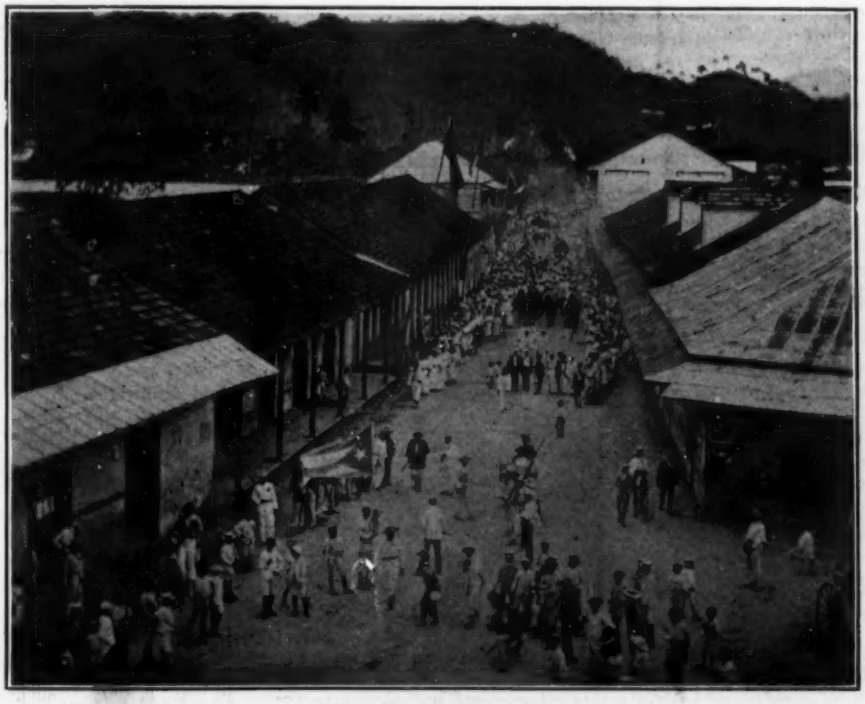
We fell asleep that night to the music of the bells in the nearby cathedral. The next day we explored the city, bargained for horses to take us into the valley where the rubber grew, and bought a few necessaries in the very excellent stores. Then we looked up the American consul, who is also a physician and is doing a deal of good in a community where fees are small and not promptly collectible.

Baracoa is very beautiful with its tiny bay, its stretches of sandy beach, its close encircling mountains and its red tiled houses. The sky is constantly crossed by fantastically drifting clouds and the sunsets are wonderful. While the stores are exceedingly well equipped, the city could, however, not boast a dentist, an oculist or an automobile.

It was during his first voyage in 1492 that Columbus entered Baracoa harbor. It was first called Puerto Santo but afterward the name was changed to Puerto de Baracoa. The secretary to the great Admiral describes the discovery and the landing very graphically. The little caravels anchored off shore and Columbus jumped into a boat and had gone in to take soundings. He soon found the concealed mouth of the harbor and was so delighted with the freshness and beauty of the trees along the shore, the clearness of the water, and the many birds, that he expressed a desire never to leave the place. Quoting from the original "letter."

"To give a true relation to the Sovereigns of the things they had seen, a thousand tongues would not suffice nor his hand to write it for that it was like a scene of enchantment. He desired that many other and prudent witnesses might see it and he was sure that they would be as unable to exaggerate the scene as was he."

As far as I could learn, the mountain valley estate where the rubber grew, and which was known as "Nunez," was only five miles out of town and the ride was to be but a brief one. When, therefore, we did not get away at seven in the morning as we planned, and indeed were two hours late in starting, I fancied that it made no difference at all. I was also perfectly content to



MAIN STREET, BARACOA.

have José follow with the pack horse and our provisions and extra clothing, when he got ready. We, therefore, Don Angel and I, rode out of town, forded a river and were soon on a mountain trail that followed the erratic course of another and larger river. When I say followed, I mean that in its fullest

Typical Cuban Landscape.

sense, for when the banks grew too precipitous on one side we forded the stream and rode along the other. By mid-afternoon we had crossed and recrossed so many times that I had lost count and was wondering what "five miles" Cuban meant in English. The scenery however was grand, the day not too hot, and the little horses sure-footed and easy to ride, so I was contented. At last, about five o'clock, we crossed the river for the last time, scrambled up a steep bank, passed through a thicket of giant bamboo, and found ourselves in front of a huge thatched house surrounded by dilapidated outbuildings. We were welcomed by a big, athletic negro, who was in charge of the place, his greetings being seconded by half a dozen thin hounds, many naked pickaninnies and the lady of the house, who, suckling an infant at her breast, and a big black cigar in her mouth, gave us a tiny yellow hand and warm greeting in Spanish.

The big house had evidently been a planters' mansion at one time, but its negro tenants had allowed it to go to ruin as fast

Baracoa, with Yunque in the Background.

as it pleased. The narrow veranda in front had sagged to an angle of about 45 degrees, and polished smooth by many bare feet it made a slippery ascent; but we negotiated it safely and were soon in the great living room, seated in wrecks of massive chairs, covered with stretched cowhide. We at once formed the center of an interested circle of negroes, big and little, dogs, hens, pigs, goats and turkeys, all of whom seemed to have the run of the house, while Don Angel like a patriarch of old, patiently explained the cause of his visit, asked after the health of each individual and listened to voluble descriptions of plantation and domestic happenings, garnished with gusts of rollicking laughter. Night fell and the big room was lighted by half a dozen of the most primitive of all lamps, tin cups filled with cocoanut oil, on the top of which floated cotton wicks.

Apparently José and the pack horse were not expected that night, for suddenly the lady of the house seized a chicken, wrung its neck, without disturbing the feeding infant or losing the ash from her cigar and still chattering made her way to the open shed in the rear of the house, to get supper. This she prepared very quickly over the usual fire of sticks built between three stones. We were very hungry and the coffee, chicken and sweet potatoes were exceedingly good. She also gave us white bread, of which she was very proud and the vicious jab she made at an eight-inch centipede that ran across my piece as it lay by my plate, showed she knew it was too good for the natives.

The nights are cool in these mountain valleys and I had begun to wonder about our sleeping arrangements. Don Angel however was equal to the occasion and showed me to a cot in an

San Juan Hill.

adjoining room where I stretched out with my rubber coat over me for warmth and was soon fast asleep. In reply to my queries he had assured me that he had a comfortable bed in another room, and I had supposed that he was at least as well off as I. But I discovered later that he had placed three of the dilapidated chairs in a row and slept upon them while I had the only cot. My heart warmed toward him for this bit of modest courtesy. Indeed during the whole of the trip he unobtrusively saw to it that I had the best of everything—horses, food and service—and was the true Spanish host ever thoughtful of guest and forgetful of self.

The night passed without events of importance. Towards morning I wondered why I could hear the crowing of the cocks so near and I found out at daybreak that three bold-eyed fighting cocks were tethered close to my bed. I also awoke once in the night when a heavy shower drove a score or more of the big black hogs to cover under the house, where they squealed, grunted and crowded one another for half an hour before settling down to sleep.

The morning broke clear, cool and delightful, and after coffee we went out to view the plantation. The valley broadened out and consisted of a fertile alluvial plain some ten feet above the river. Here were thousands of cocoanut trees in full bearing. There was also coffee, many acres of cocoa and a forest of huge bananas. The plantation needed only a little care to make

it a wonderful producer, nor was there any sign of the disease that had killed off so many of the cocoanut trees down in Baracoa, while the cocoa showed no signs of the dreaded "witch-broom."

It was, however, rubber that we were in search of and we found it. The trees, *Castilloas*, were very large and thrifty. The leaf suggested the *Guatemalensis* and I was pleased when Don Angel remarked that a near relative of his had married the daughter of the president of Guatemala and brought the seed from that country. The latex was thick and rich and flowed even in the middle of the day. There were only 20 or 30 of the big trees, but on the ground beneath were hundreds of young seedlings. In fact here was the nucleus of an exceedingly valu-

Largest *Castilloa* in Cuba, 58 Years Old.

able *Castilloa* plantation. We coagulated some of the latex with alcohol and got a clean, strong and mature rubber. It was here that I added a rather unusual bit of rubber information to my store. Don Angel in tapping one of the trees got some of the latex in one of his eyes and was suffering intensely. I suggested warm water and we went back to the house for it. The lady of the house, however, knew a better remedy, namely human milk. This she applied dexterously and promptly from her own ample store and the pain was at once allayed.

The tale of an indigenous rubber tree that could be found up the mountain side took us up one of the steep trails as far as the horses could go; then we climbed. We found the tree, the "Lechugo," but the latex was of no value commercially and except for the exercise and the fine appetites developed by it the

Castilloa at Nunez, Showing Seed Pods.

excursion bore no fruit. On our return we found that the pack horse had arrived and we dined abundantly.

Another day we went far up the mountain taking a score of young Castilloas with us and set them out with appropriate ceremonies. This trip was more particularly for the purpose of observing the forest growth and the rubber planting was but an incident.

More and more was I impressed with the beauty of this hidden valley. It was so sheltered that no hurricanes nor even high winds could harm it. Brief showers came every day, the air was balmy, not too warm in the middle of the day and cool at night. Above all was the freedom from mosquitoes. I was also much impressed by the athletic manly mountain negroes. They were of a far better type than those in the towns. After a few days of exploration it was easy to understand why it was that the Spaniards could not conquer Cuba. There were scores of fastnesses where one man would be safe from a regiment. There was food and water in abundance and a climate where one needed only the most primitive of shelters from the rain or the evening dews.

During one of the trips I found a curious hard-shelled, jointed worm some ten inches long and about an inch through. I captured it for a curio in spite of the earnest protests of Salvador, my guide. As far as I could make out from his broken Spanish the worm was the dreaded Cocosi (if that is the way to spell it), and those who meddled with it became blind. However, I tied a string around it and carried it as far as the house and should have brought it back to the States, but one of the black pigs bolted it while my back was turned. As for the blindness I have never—but stay—I wonder if that was what ailed my eyes?

And so we explored the Rio Thor, the Rio Blanco and other rivers, stopping at the few negro homes, fed on tropical fruits, drinking the delicious milk of the green cocoanuts, and growing ever more fascinated with the country. Our dinners each evening at the plantation house were abundant, picturesque and eaten with enormous appetites. The freshest of eggs, fish from the rapidly flowing river, fresh pork and chicken. What if there were but two plates? What if my goblet, because of its broken stem, had to be set in a tin can to maintain its equilibrium? True hospitality was there. The dark host and hostess hurried anx-

iously about with new and appetizing dishes. The pickaninnies gazed with wide open eyes, and the circle of gaunt hounds sat and slavered at every mouthful. A bone thrown to them resulted in a mass play that had football beaten a mile. Speaking of the dogs, they are really to be respected. Left to guard a house, no one may enter. They will fearlessly attack the huge

DON ANGEL AND THE WRITER.

wild boars that are found in those mountains and harry them until their negro master makes the kill, or as is often the case is himself killed. In the last case the dog will stay for days watching and starving, until help comes. These boars, huge fellows, four feet high at the shoulder, with tusks eight to ten inches long, are vicious only when attacked. We saw their spoor many times but as we were not hunting them we had not the slightest uneasiness, even though we knew that they were aware of our close proximity.

The mountain negroes are very friendly toward Americans. Thus, Salvador had named one of his girls, America, to show his admiration for Uncle Sam.

Incidentally we tapped some bread fruit and some chicle trees while at the plantation. The latter gave a fair grade of chicle, while the former produced an exceedingly sticky gum that may or may not have contained a certain amount of rubber.

Finally the day came for our return to Baracoa. We said our goodbyes not only to Salvador and his family but to all of the neighbors for miles around who had come in for the purpose. The horses had been dispatched down the trail hours before, as we were to go a part of the way by boat. The one o'clock start was made at three. The small flat bottomed boat was more than crowded. Beside the boatman, Don Angel and myself, were America who was going to visit relatives at the Boca, a goat, two kids, bananas, cocoanuts, some furniture, saddles for the led horses, etc., etc. The river, although broad, was at that season of the year a series of ponds connected by rapids of greater or lesser turbulence. We progressed partly by paddling and partly by poling. Half a mile from the plantation America's little yellow dog was discovered swimming calmly in our wake, so we laboriously poled back to return him to his home. Then we started on our way again.

This river ride was long to be remembered, so beautiful were the forested shores, so clear was the water, and so balmy the air. At nightfall we were still far from our destination. The river was broad and deep now, and the boatman hugged the shore as he poled. We no longer shot rapids with the boat's bottom thumping on hidden rocks, the prow swinging from side to side. One of those thumps had loosened a plank and America was cheerfully bailing out the water that swashed to and fro in the bottom of the boat. Soon we heard the roar of breakers and the evening breeze came up the river strong and salt. Later we crossed to the further side where showed a light; tied up at a rickety pier; scrambled ashore by sense of touch rather than sight and found a tiny river settlement. Here under a huge shed, in one corner of which was bar and kitchen, we ate a big meal and sat around and smoked as if it were not evening and we had many miles more to go before we reached home. Next followed a horseback ride for a mile or more over a narrow gauge banana railroad. I presume my horse could see where he was going, I am sure I couldn't. The road ended at the bank of a deep lagoon on the further bank of which was the dim outline of what seemed to be a ferry slip. After many hails a big boat came slowly across, we embarked; the horses, stripped of their saddles, were urged into the water and we crossed. I did not wonder at the reluctance of the horses when I learned that the occasional heavy splash with the accompanying shower of phosphorescent sparks, meant sharks, with which the waters swarmed. Then came a long ride along the beach, water on one side and shelving coral cliffs on the other. I noticed that the

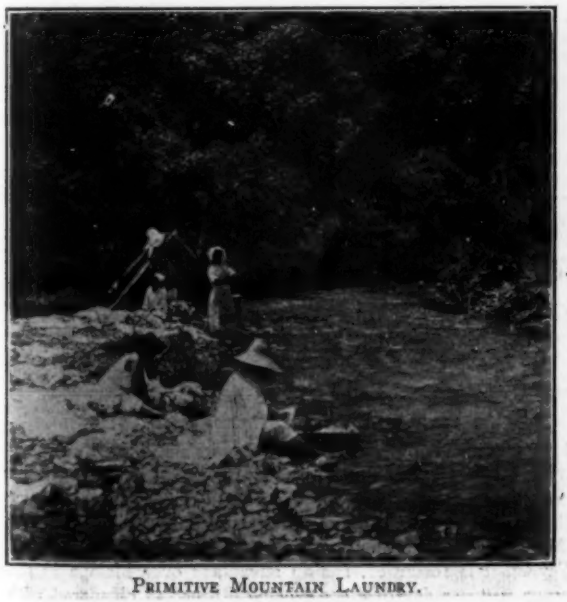
PLAZA AND CATHEDRAL, BARACOA.

thin strip of beach along which we rode began to be wet by an occasional wave. The tide was rising. Soon Don Angel with

a ring of anxiety in his voice, urged greater haste. So I lustily whaled my mount, dug the spurs into him and yelled, but only succeeded in stirring him up to a slightly faster walk. He was nearly tired out. My friend's anxiety increased. His little bay seemed quite fresh and he spurred back and helped me urge mine. But it did not work. It began to look as if we were to be caught between the sea and the high coral cliffs. Just then I saw an opening in the reef and swinging off I pulled my beast up a steep path to a grassy pasture above. Talk of luck! that was the path we were seeking. An hour more and riding turn and turn about and leading a spent horse we reached Baracoa not a bit the worse for our somewhat unusual ride.

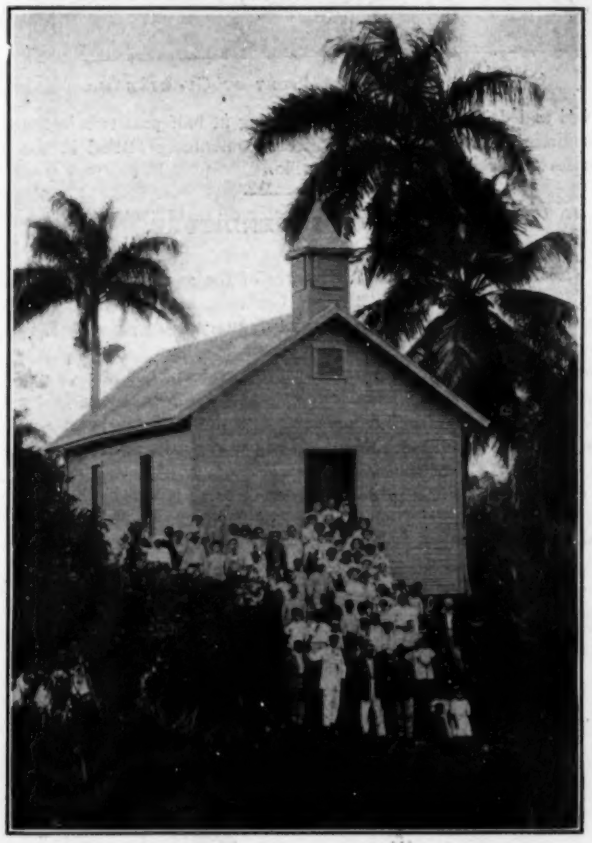
Bamboo Thicket.

It is fully as hard to get away from Baracoa as it is to reach it. We waited several days for a boat, and finally got passage on the *Gibara* of the Sobrinos de Herrara and through the good offices of Don Angel were comfortably quartered. We could not return to Santiago direct but were obliged to go to Antilla and thence by rail to Santiago. The *Gibara* was not as large even as the *Habana*, but the sea was smooth and the coast line was enchanting, so we spent much time on deck.



Primitive Mountain Laundry.

Steaming out of the harbor recklessly at six miles an hour (full speed) we passed the cocoanut plantation "Jaitecio" and were on our way. At four that afternoon we reached the hidden entrance to Sagua de Tanamo Bay where we lay for twenty-four hours taking on mahogany. Here we had our meals on the upper deck under an awning and were very comfortable. It was during this wait that I became acquainted with the Reverend Juan. He appeared a short, thickset, energetic English business man, but was really a whole-hearted, hustling Baptist missionary preacher. I learned later that he had converted 65 per cent. of the whites in that part of Cuba to his Faith; had five little churches and something like a thousand communicants. Like the early Jesuits, no hardships were too great for him. He swam rivers, slept in the forest, acted as physician, nurse and counsellor to the Cuban negro and was exceedingly loved. He was full of information concerning the country and I was glad to verify my figures on temperature with his and clinch my conclusion that the mountain valleys, sheltered though they were, were hardly fitted for *Hevea*.



One of the Rev. Juan's Congregations.

He pointed out a cocoanut plantation owned by an Englishman that had been attacked by disease but had recovered and was flourishing because the owner had burned every affected tree. He told us of the great iron deposits along that shore, one containing thousands of acres, purchased by an American, and of the preliminary location of a huge blast furnace. As the Cuban Government, however, demanded six dollars a ton for all machinery brought in, the project was abandoned.

Our leisurely loading finished we pulled out for Preston where the United Fruit Company is operating a large sugar mill and

has also erected a large hotel, where we planned to spend the night. Reaching Preston at nine in the evening we found the big barracks of a hotel crowded from attic to cellar. So the Reverend Juan engaging for us a sail boat, we embarked and

CAIMANERA, THE WATER FRONT AT GUANTANAMO.

sailed and drifted across the bay landing at half past two in the morning and a half hour later were contentedly settled in the comfortable Railroad hotel at Antilla.

PLANTATION EXPENDITURE.

ONE of the most valuable features of the spec.al consular report upon Malayan Rubber Growing, abstracted by THE INDIA RUBBER WORLD in the issue of January last (page 161), is the pro forma detailed statement of the expenses incurred by a thousand-acre estate, with a yearly production of 400 pounds per acre, from 120 trees. These interesting tables were prepared by Mr. C. C. Malet, formerly connected with the Department of Agriculture of the Belgian Congo, but at present a licensed valuator in the Strait's Settlements.

As mentioned in the brief reference to these tables, in the January issue, the total cost of production, freight to Europe and sale there, represented 25.8445 cents per pound.

TOTAL EXPENDITURES.

This t[illegible] cost is formed of the six following items:

	Expenditure.	Average cost per lb. on basis of 400,000 lbs. per annum.
1. General estate expenditure	$ 48,840	12.210 cents
2. Tapping expenditure	26,700	6.675 "
3. Factory costs	5,930	1.483 "
4. Shipping costs	12,308	3.077 "
5. Sale charges, etc.	5,760	1.440 "
6. Bonuses, etc.	3,840	.960 "
Total expen. of 1,000-acre estate	$103,378	
Cost per pound on 400,000 lbs.		25.845 cents

By the above singularly lucid arrangement the estimated cost at any stage may be ascertained. The first three stages, up to the point of shipment, represent 20.368 cents, while the three later stages represent 5.477 cents. It will be noticed that nearly one-half of the total cost is incurred before tapping, or, in other words, in seconding and facilitating the work of nature. While this estimate is supposed to include all outlays from period of planting and weeding up to and including the time of auction in Europe, it does not cover anything for interest on capital employed. Assuming that interest of four to five years has to be covered on a large share of the first item, it is a question whether the current estimate of "eighteen pence a pound" for plantation cost is materially affected by Mr. Malet's figures. Of course they, in common with all pro forma estimates, have to stand comparison with actual recorded facts. They are based, it will be remembered, on the supposed case of a 1,000-acre estate yielding annually 400 pounds per acre, but are susceptible of comparison with actual results.

The following summary tables deal with the separate items of cost, as shown by Mr. Malet's estimate:

Item 1, General Expenditure		
Rent, 1,000 acres at $2.272	$2,272	
Hospital staff and up-keep	2,579	
Visiting medical officer	682	
Assessment for roads, etc	284	
Planters' Association	114	
Up-keep of buildings, furniture, etc	852	
Agency and visiting agent	3,408	
		$10,191
English expenses of direction, etc	5,680	
Estate management and clerical staff	17,609	
		23,289
Field up-keep force (28c. per man per day)	8,180	
Headmen for do	409	
Carters and gardeners (10), at (28c. per day)	909	
Up-keep of cattle and motor car	568	
Up-keep of estate, tools, etc	1,136	
Recounting of labor, etc	1,136	12,338
Contingencies	3,022	3,022
Total Item 1		$48,840
Item 2, Tapping Expenditure		
Wages of tapping coolies	$25,500	
Wages of 10 headmen at 40 cents per day	1,200	
		$26,700
Item 3, Factory Costs		
Wages	$2,226	
Acid	110	
Fuel	654	
Repairs and lubrication	1,140	
Cases (3,000) at 60 cents	1,800	
		$5,930
Item 4, Shipping Costs on 3,000 cases		
Transit to vessel	$ 638	
Freight to Europe	3,750	
Wharfage and delivery, 72 cents per case	2,160	
Insurance	960	
Export duty 2½% ad. valorem (on $192,000)	4,800	
		$12,308
Item 5, Sale Charges		
1% on $192,000	$1,920	
Brokerages and agency charges, 2%	3,840	
		$5,760
Item 6, Bonus to agents and estate staff		
2% on $192,000	$3,840	
		$3,840

REDUCTION OF PLANTATION COSTS.

IN discussing the above subject, "Grenier's Rubber News" remarks that while the policy in estates under honest management is to reduce the cost of production to the minimum, that figure will of necessity vary. The cost of production will in some parts of Malaya to be found much higher than in others.

Ceylon, it is remarked, has an advantage over Malaya in the average cost per day of a cooly being 6 pence as compared with 10½ pence; the inducements afforded by the higher Malayan wages resulting in the Indian immigrants finding superior attractions in the latter country, which thus secures the labor.

THE FUTURE OF RUBBER PRICES.

A LONDON correspondent of the "Gummi-Zeitung" in dealing recently with the above subject, remarks that the English rubber market, since the beginning of 1912, has displayed unusual steadiness, coupled with a moderate amount of business. He adds that plantation sorts (the production of which for the current year is estimated at 22,000 tons) are at a high-water mark, which has been fluctuating within narrow limits above 5 shillings ($1.2163), or about 8 pence (16.21 cents) higher than the best wild rubber, a visible proof being thus afforded of the preference of consumers for plantation rubber. The quantity of this class (by no means small) offered at the last London auctions all met with buyers at full prices.

Such, it is remarked, is the tenor of broker's reports, and of the plantation companies to their shareholders.

"But," the writer asks, "what have we to expect for the immediate future? A definite fall in prices, or a decided advance? A new rise or a drop? As high as 5*s.* 4*d.* has been paid on several occasions for light plantation crepe. And in spite of all this, the selling prices of automobile and bicycle tires have been considerably reduced by the best makers. How can these facts be reconciled?"

"If we inquire, in Mincing Lane, the reason of the steady high level of prices, we are told: 'It's the persistent inquiries from the consumers.' So it is consumption that is itself keeping up the market? And yet it is known that at present only the most urgent requirements are being covered. Prices are too high—much too high, and consumers would prefer to buy nothing, were they not obliged to do so."

"The supply in all kinds of rubber is important, and has increased in far greater proportion than the growth of the rubber goods industry. Thus it is only to a very limited extent that consumption has to bear the blame of the present high price of the raw material."

With regard to the present attitude of speculators, the following interesting suggestion is put forward:

"From the steadiness of the market, we might be tempted to believe that speculation, which previously was so successful in its manipulations, was asleep or had withdrawn. Such is, however, a vain hope. The probability is rather that those interested in a rise or a fall are acting on about the same principle and are now balancing each other, but that both factors, on account of the risk and in the present difficult monetary situation, are deterred from risking a *coup* in one or the other direction. The time is, however, approaching when the one factor *must* give way to the other, and there is every prospect that in this measuring of forces, those wanting a rise will be vanquished. The rubber manufacturing industry, which is capable of exercising a greater influence upon the crude rubber market than it has hitherto done, should not be satisfied until the price for Pará is brought below 4 shillings a pound. For the speculative element is not idle."

Looking at the matter from another point of view, it is asked, if in previous years, the crude rubber trade was doing very well when wild rubber of South American and African origin was selling far below present prices, why could it not do the same today. It is added:

"The complaints as to the alleged increasing difficulty of obtaining rubber from distant forests cannot be substantiated. In the Amazon territory and the Congo, improved road and rail construction, removal of duties and other administrative measures, have afforded support to the rubber growing industry, in view of the growing competition from plantation rubber. On the other hand, it is admitted that Eastern plantations would pay handsomely at a price of 2*s.* to 2*s.* 6*d.* for their product. According to their own declaration, a pound of pure rubber only costs the sound plantation companies about 1*s.* 6*d.* The profits of plantation cultivation on this scale, upon the above yearly quantity of 22,000 tons, runs into the hundred millions of marks."

Finally, the attention of the rubber industry is called to the fact that the stock of rubber at points of export and import (apart from the quantity afloat), is, in the writer's views, enormous. Reference is made to receipts at Pará from the interior, of 4,000 tons up to February 24. There were, at time of writing, over 1,000 tons of plantation rubber in London for the approaching auctions, while 500 tons of Congo and other rubber were listed for the next Antwerp sales. Behind these quantities is the Brazillian stock which has not yet come upon the market.

The writer brings up the point that the "bullish" reports of rubber brokers and plantation companies make it appear as if the manufacturing industry could use all these quantities through its unlimited capacity of absorption. In fact, as it is remarked, the industry is made to look as extensible as the raw material it handles; the chief object of the companies being to keep up the profit of their operations, while manufacturers may be satisfied with their industrial gains for working the rubber.

It is urged in conclusion, that this view is based on a mistake; perhaps an intentional one. The writer adds:

"The purchasing power of the public, and thus of the rubber manufacturing industry is limited. The times are not bright. Before the automobile becomes generally used by householders, before the bicycle and rubber shoes are adopted by poor people, before there is a noiseless London through rubber paving—prices of raw material must have been considerably reduced."

"Therefore the rubber trade, and particularly the rubber goods manufacturing industry, can themselves help, by skilful buying and cautious operations, to bring down the prices of this product, so indispensable to the industry of the present day. All prospects would seem, from above explanations, to favor this course."

TECHNICAL USES OF "MANIHOT" AND "KICKXIA."

AMONG questions now engaging the attention of rubber scientists is the connection between the preparation and application of different varieties.

In an interesting booklet, Dr. Frank has reproduced his paper, read at the recent London Rubber Exhibition, in which the whole subject of the cultivation and technical uses of plantation rubber is dealt with in such a manner as to bring the salient points involved clearly before the reader. While professedly referring specially to *Kickxia* (*Funtumia*) and *Manihot*, the general features outlined serve as landmarks for the consideration of the rubber question, and lead up to the subject of standardization of rubber treated, by Dr. Frank's colleague, Dr. Eduard Marckwald, in his booklet referred to in the March issue of The India Rubber World (p. 269).

Dr. Frank pertinently remarks, in continuation of his previous utterances, that it is desirable to bring about uniformity in the methods of preparing rubber on the plantations, in order to pave the way for a standardization of plantation rubbers, which would greatly increase their usefulness. The suitability of plantation rubber, it is remarked, is dependent firstly, on climatic and soil conditions, and secondly, on the manner in which it is prepared. The species of tree, though influencing the value of the rubber, is only of secondary importance.

Dealing with this last branch of the subject, Dr. Frank states that *Hevea* rubber, if carefully prepared will always be regarded as the most suitable general product, while *Kickxia* rubber has not been considered to possess the same technical value. The

characteristics of *Manihot* rubber, at first not sufficiently comprehended, are now more fully understood, that variety being regarded as just the material for articles to be subjected to pressure and friction.

The joint investigations of Dr. Marckwald and Dr. Frank have led to the discovery of the fact that the mode of preparation was of far greater importance than had been at first supposed. Certain acids or plant products act in such a manner during the coagulation of *Manihot* rubber, as to make it firmer. Among the various coagulants tried, none seem to have given so good a rubber as the juice of the wild lemon. In addition to articles to be subjected to pressure and friction, it is claimed that "patent rubber" goods can be advantageously produced from *Manihot* rubber. At the same time, *Manihot* should not be strongly worked mechanically in the Tropics, the goods made from it being thereby proportionately depreciated in value.

If a robust rubber like *Manihot* is so strongly modified by variations in the coagulant and the mode of preparation, how much more true is this of the sensitive *Funtumia*, which it has taken years to get accepted in the cultivated form? Today, when chemical and physical methods are available for determining the value of raw rubber, the proof is furnished that rubber goods can be made from *Kickxia*, which are not only elastic but "nervy" as well. Such a result is, however, only obtained by employing methods adapted to the local circumstances.

Among the various detailed points emphasized by Dr. Frank are those of plantation costs, artificial fertilizers, preparation on the plantations, preliminary working, shipping and storage. In conclusion he remarks that what has been said of *Manihot* and *Kickxia* also applies to *Hevea*, *Castilloa* and *Ficus*, it being of importance that the special conditions of the particular plantation should be taken into account at the start as well as at every stage of production and preparation. To use his own words: "By systematic work, it would be possible to find for every plantation a method of preparation which would meet its special conditions, in such a manner that perfectly first-class grades fully equal to wild rubbers, would be produced."

Such are a few of the leading points in Dr. Frank's valuable paper, which merits careful perusal by those interested in the subjects treated.

RUBBER PRODUCTION OF THE GERMAN COLONIAL POSSESSIONS.

ACCORDING to the official report on the German Colonial Possessions for the year ending with April, 1911, the period under review had been in general favorable to their development This was largely due to the construction of new railways, while scarcity of labor proved a difficulty at various points, especially in the more closely planted districts of East Africa.

In view of a recent noticeable reduction in the interest previously taken by German and English capitalists in German colonial investments, the Imperial and colonial administrations have been jointly investigating how the abuses which have occurred in connection with certain new incorporations could be prevented in the future.

Under the influence of the high prices current in the earlier part of the official year 1910-11, German colonial rubber exports display a marked increase in comparison with those of the preceding annual period, as will be seen by the following figures:

RUBBER EXPORTS FOR YEARS ENDING APRIL, 1910 AND 1911.

	1910.	1911.
Kamerun .....*tons*	1,517.635	1,961.756
German East Africa.....	474.348	743.706
Togo	136.785	134.919
German New Guinea.....	6.616	8.649
Total from German possessions.*tons*	2,135.384	2,849.030

KAMERUN.

Kamerun took first place, nearly the entire quantity from that source in 1911 going to Germany, 1,747.540 tons; England taking 195.900 tons, and other countries the balance, 18.320 tons.

Rubber formed in value more than one-half of the 4¼ million dollars' aggregate of Kamerun exports for the year 1910-1911. The total number of rubber trees in Kamerun at the end of April, 1911, was 5,744,248, divided as follows:

Kickxia .....*trees*	4,915,865
Hevea	786,270
Manihot	19,343
Ficus	16,686
Castilloa	2,584
Sundry varieties.....	3,500
Total	5,744,248

It is stated, however, that the yields from *Kickxia* have not been encouraging, and that while its cultivation has been materially reduced as compared with former years, that of *Hevea* has recently made great progress, planters finding advantage in such a course. *Hevea Brasiliensis* gives a larger yield, is less exacting than *Kickxia* as to soil, and is very suitable for intermediate planting with cocoa, this combined plan of cultivation now being more or less generally carried out. Owing to the necessary quantity of Kamerun seed not being available until 1912-1913, most of the young plants have at present to be imported from India. When this necessity no longer exists, a considerable extension of Kamerun planting is anticipated.

GERMAN EAST AFRICA.

The following results are shown for the year 1910-1911:

	Exports to Germany.	Exports to other countries.	Total.
Plantation rubber .*tons*	359.85	54.04	413.89
Wild rubber	268.37	61.45	329.82
Total .....*tons*	628.22	115.49	743.71

In rubber cultivation *Ceara* seems to have assumed the first place, hitherto occupied by *Manihot*.

A purifying establishment for crude rubber is being operated at Muheja and is said to be well occupied, while another is being installed at Tanga. In many cases the crude product is rolled and at the same time washed on the plantations.

TOGO.

The whole of the exports of rubber went to Germany and were about the same in quantity as during the preceding year.

GERMAN NEW GUINEA.

The surface under cultivation with rubber in New Guinea in April, 1911, was 6,040 acres, distributed as follows among different varieties:

Ficus .....*acres*	4,237
Hevea	1,150
Castilloa	640
Manihot, etc.....	13
Total	6,040

While these figures only deal with the year ending April 30, 1911, they are indicative of the present tendency of rubber cultivation in the German colonial possessions.

PREPARING FOR PANAMA.

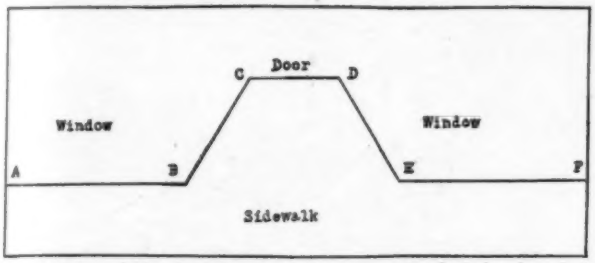
With the object of preparing for the augmented financial requirements involved in the expected Panama Canal traffic, the Hamburg-American Steamship Co. has increased its capital by $6,250,000, bringing it up to $37,500,000.

Window Displays for the Rubber Goods Dealer.

By a Practical Window Trimmer.

THE retail dealer in any line finds, before many seasons have passed, that his window is his best salesman. If he is wide awake he will see that 50 per cent. or more of his business is the result of an attractive window display. Tempting the public to come in sells more goods than a silver-tongued orator behind the counter, no matter what the line is. Of course, the rubber line is not an exception to this.

The window trimmer for a rubber concern finds more difficulty in plying his art than a window trimmer in some other lines. Ladies' suits, furniture and similar lines lend themselves



to artistic window arrangement on account of their size, but with rubber goods it is different, since in that line many of the articles are so small. Being small they do not lend themselves to an artistic arrangement as easily as do larger articles. In decorating a window with small articles it is very easy to arrive at a finished product which is far from being a selling feature; to get, in fact, a slip-shod, thrown-together look that is far from attractive.

In trimming a window the first point to be considered is:

From what points is the window viewed? Generally speaking, there are two types of display windows—one is the straight front window, and the other is the corner window—with corners of varying angles. Most of these corner windows are formed by the fact that store doors are set back some little distance from the walk; that gives the window arrangement shown in the accompanying figure. In the straight front window there is, of course, only one point of view—directly in front—and the window has to be dressed with reference to that viewpoint. But in the corner window it is necessary to arrange the display so that it will be sightly from either side. Referring to the figure used for illustration, the display must be arranged so as to be viewed from the sidewalk lines A B and E F and also from the entrance lines B C and D E.

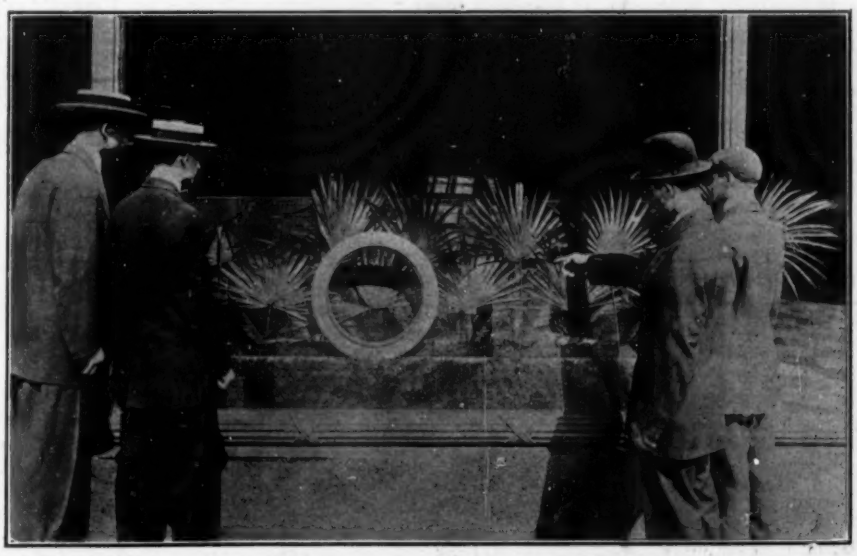
In brief, the only point to be remembered is to have your display face the points from which it is viewed. If you do this you cannot help arriving at a pleasing and effective arrangement of goods.

A window display should be built up and not thrown in. The first thing to do is to select some article rather large, or a collection of similar smaller articles, which can be used as a foundation, so to speak. Around this foundation or central object the rest of the display should be arranged in an artistic and balanced manner. For the central object one large article or a group of large articles can be used or you can use a collection of small articles (all alike), arranging them in a symmetrical style. After having obtained a central object, or idea, other articles should be grouped around this in a balanced manner. It is not necessary that the same article should be placed on both sides, but it would be a poor balance to put a large auto tire, for instance, on one side and a small water bottle on the other side in the corresponding position. In building up a window display it is well to have the central part higher than the rest, with the lowest part of the display at the ends. This gives a finished and graceful look to a window.

Another point to remember is this: Don't put, or even try to put, everything in the window at the same time. Don't think for a moment that if water bags are not shown in the window every time it is trimmed that people will conclude you don't carry them. Many window displays are ruined by the desire of the trimmer to show everything in one window. Large stores, having many windows, seldom do this, but the small store with one or two small windows often tries to show everything—with unhappy results. Better trim the window oftener and thereby avoid this mistake.

While on this point of what to put in the window, it might be well to say that very good results are obtained by having a strong display of only one article in a window. For instance, a window filled with nothing but water bags is bound to be a selling force because it puts all its energy in displaying one article. No matter how well the bags were displayed in conjunction with other goods they could not show off to as good advantage as if displayed alone. This, of course, is true right through the line from the smallest article to the largest.

A concentrated display of one article not only booms the sale of that particular article but also promotes the sales of similar articles. For instance, a display of water bags will, of course, sell water bags, but more than that it will cause your sales of other articles used in a sick room, to increase. I know of a case where a window was given over to the display of a certain



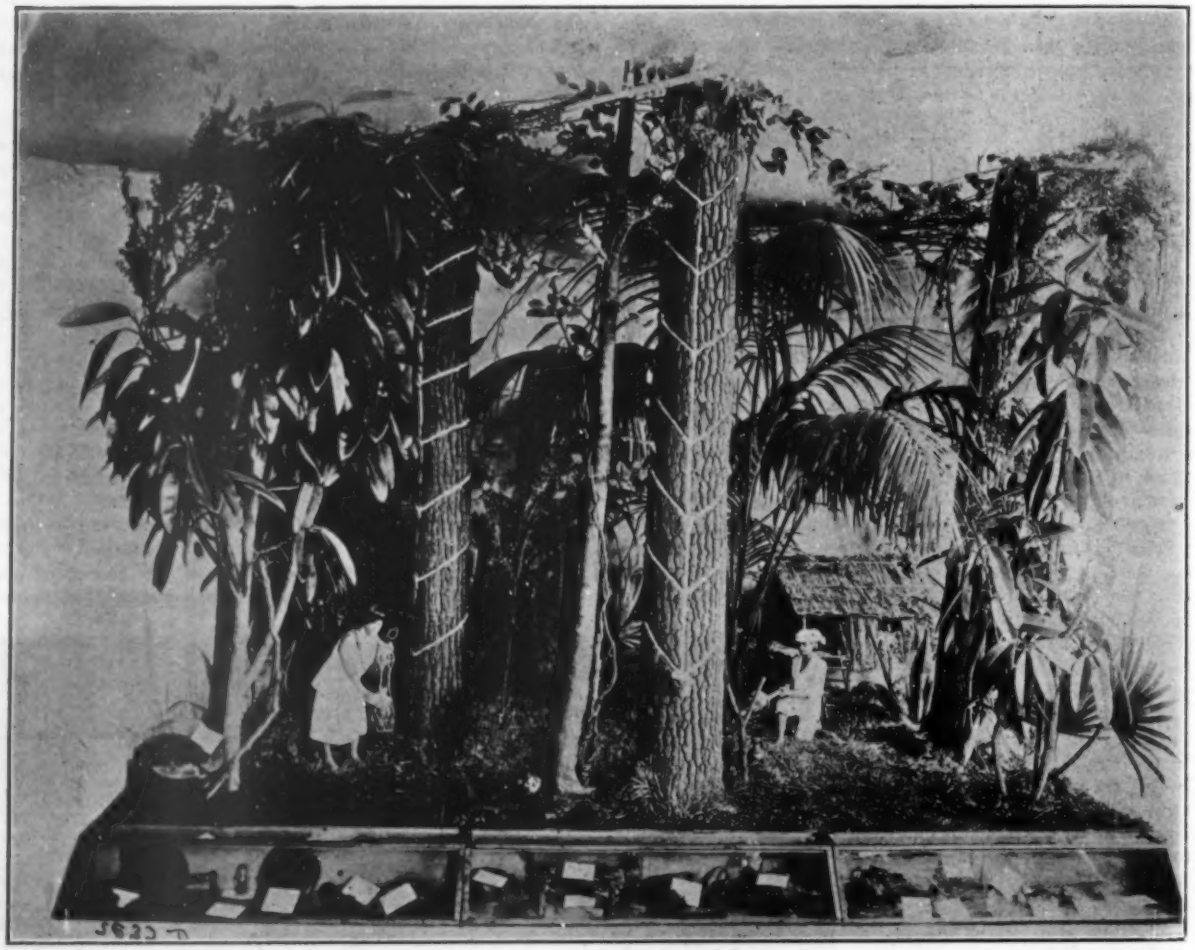
WINDOW DISPLAY OF SELF-MOVING TIRE.

make of safety razors. Of course, the sale of those razors began to increase but more than that the sale of other makes of razors began to jump, and, in fact, all razor and shaving accessories took a big start. In that case it paid to specialize in window displays. What is true of razors is equally true of rubber articles, or, in fact, of any line.

There is one exceedingly important point that must always be kept in mind—that above all things the window must be kept sightly. If possible, it should be trimmed frequently, the successive displays showing a strong contrast. But whether trimmed frequently, or not, it should never be allowed to look "mussed up" and particularly it must never be allowed to look dirty. It is of little avail to have cleanliness and order within the store if they are not reflected in the window. On a busy city street a thousand people see the window where one looks inside the store; so the store window should always be kept at its best.

A retail dealer, in any line, finds that new articles give a big "boom" to his business in many ways. They draw attention, start people talking, and finally lead to increased business. Always be on the lookout for new articles. If you can get something that your rival hasn't got yet, get it. Make a feature display of it and watch results. To be sure you can hardly expect to enjoy the monopoly very long but you were the first one, and that's what counts. The dealer who gets ahead in the rubber business or in any business is the one who is on the lookout for new articles all the time. But don't stop there. Feature them in your window and let people see them, so as to reap the full reward of your enterprise.

Another point that will give a store a progressive air is seasonableness. Make a feature display of rubber articles useful on a vacation and just as soon as people begin to think of going away, or better still, just a little before they think of their vacations remind them of these articles by an attractive window. As soon as Thanksgiving is over put in a display of articles suitable for Christmas gifts. For the Fourth of July have a display of rubber bandages, fingers and such things. Timeliness is the greatest of salesmen. Always try to anticipate the other fellow, however, and have your special display doing duty while he is still thinking it out. Being first is half the battle in any form of advertising. Watch your own window, watch your rival's window; make a study of each, and see if you can't make a better looking display than anyone else in your line.



WINDOW DISPLAY REPRODUCING A RUBBER FOREST.

The two window displays which are reproduced by way of illustrating this article were used by The B. F. Goodrich Co. and were shown in the windows of its branches all over the country and attracted a vast deal of attention; in fact, there was invariably a crowd before each window. One shows a rubber gathering scene in South America and reproduces as nearly as possible the actual picture. It is very realistic and most effective. At the bottom it will be noticed there are several cases containing interesting rubber curios.

The other window display, while considerably simpler, attracted possibly just as much attention because of an exceedingly unique feature. The tire shown in the center is on a track and travels back and forth without any visible motive power and evidently of its own volition. Pretty good tires are now being made in this country but none as yet have been produced that are capable of automatic movement, so there doubtless is some hidden mechanism that runs the tire; but what it is is not observable to the man on the walk.

These displays, of course, are more elaborate than most dealers are equipped to produce, but they show what can be done in this most effective form of advertising.

GERMAN EASTER WINDOW DECORATIONS.

With the appreciation of detail, which constitutes a feature of the German character, attention has been drawn in that country to the opportunities afforded by the Easter season for the display of rubber goods retailers.

To the rubber goods dealer Easter represents the period when sales of spring and summer requisites once more assume importance, particularly garden hose and articles connected with outdoor sports. One of the best ways to bring such goods before the notice of the public is by means of a well-arranged Easter show window, attractive to the passer-by.

In connection with this idea, a suggestion has been made to cover the flooring, ceiling and walls of the showcase with green cardboard or other suitable material. A further suggestion is made of constructing a semi-oviform figure out of eight converging conical strips of cardboard, of such a size as more or less to occupy the upper part of the showcase. This figure is then encircled with garden hose, secured by wire fastenings.

Attached to the hose would be a varied assortment of sporting articles, such as tennis-shoes, rackets, attractively fastened with ribbons, etc.; while celluloid toilet articles and other goods of attractive character, such as rain coats, etc., can also be displayed to advantage, being arranged with a certain degree of freedom.

AN INTERESTING FIRESTONE EXHIBIT.

Among the many features of special interest to visitors at the New York auto shows held in January, was the non-skid tire of the Firestone Tire and Rubber Co. This tire has a unique heavy raised lettered tread of tough rubber, making it nearly double the thickness of an ordinary smooth tread casing. The peculiar arrangement of this lettering presents many sharp edges and angles to the road and the hollows of the letters create vacuums against the paving, combining two well-known principles of skid prevention. This tire, as are all other Firestones with the exception of the regular clincher pattern, is furnished with a floating flap.

Firestone Non-Skid Tire.

Not content with meeting competition at home, the Firestone company has gone to Europe to invade the markets there with its new European type of tire. This new addition consists of a tough resilient rubber tread moulded on to a hard rubber base and shod with steel. It is somewhat similar in appearance to the tires used abroad, but has the advantage of several improvements and a fine quality of rubber.

Send for Index (free) to Mr. Pearson's "Crude Rubber and Compounding Ingredients."

The accepted authority on South American rubber—"The Rubber Country of the Amazon," by Henry C. Pearson.

RUBBER HOSE TO PROTECT PETROLEUM.

There is an active market east and west for high-grade india-rubber fire hose for use at the fire stations maintained by producers and refiners of petroleum. The Standard Oil plant at Bayonne, New Jersey, is a notable instance of an installation of the very best procurable india-rubber hose for protecting batteries of steel tanks filled with petroleum. These works are connected with pipe lines as far away as Oklahoma, making a pipeway 1,500 miles long from the wells to the tanks at Bayonne, New Jersey, and Hunter's Point, New York. This fire hose is not served with water, but with steam at the enormous pressure of 180 pounds per square inch, being a much higher pressure than exists in most of the steam engines of the world. When a fire reaches a tank of crude petroleum, the forcing of water thereupon is of no service whatever. In several great fires at the oil works at Bayonne, the work of the city fire department, though ably planned and bravely conducted, was of no value whatever, the fire going from tank to tank and building to building until property to the value of more than two million dollars, on several occasions, was destroyed.

Within twenty years, petroleum worth $375,000,000 has been destroyed by fires where vast tonnages of water were thrown on without quenching one of the fires. Most of the fires at the great storage tanks of crude or refined petroleum are due to lightning. Nearly all the fires at petroleum plants in the North Atlantic States since 1870 resulted from lightning strokes. At a petroleum storage plant it is the first ten minutes of a fire which determines whether it will be a small or big one. This fact makes it necessary for the fire department of the plant to be ready day and night to overpower the conflagration with many streams of live steam of at least 180 pounds pressure per square inch. At Bayonne 48 separate lines of india-rubber hose are constantly coupled to the steam mains. The mechanical engineers for the producers and refiners of 210,000,000 barrels of petroleum a year inform The India Rubber World that the fire departments of the works which they are in charge of use, in the aggregate, 578 miles of the highest procurable grade of india-rubber hose. In all cases the specifications for the fire hose are drawn with rigid particularity by the mechanical engineering staffs of the petroleum producers and refiners.

India-rubber hose for fire department uses in the petroleum industry is in increasing demand, because of the fact that the principle of conservation in tanks is being rapidly developed, where until lately much of the oil from the wells was allowed to seep into the ground. In this way California has lost many millions of dollars' worth of good grade petroleum that after coming from the wells was for the lack of storage tanks wasted in seepage. Last year a well in southern California, which, when newly drilled, flowed 40,000 barrels a day, ran up to 90,000 barrels a day three months afterward; when over 600,000 barrels were lost because of lack of storage tanks. Since then in that zone tanks and fire department stations have been built and india-rubber hose, aggregating 125 miles in length has been bought for these plants.

The belief was once general that the underground supply of petroleum in this country was inexhaustible. But since four once highly productive fields have become wholly exhausted and others are rapidly decreasing in production, the principal producers realize that all oil brought to the surface that is not immediately required for the markets must be stored. It is this storage movement that is giving so much occupation to makers of good grade india-rubber hose. California is now leading in the production of petroleum as classified by States—producing a third of the national output, and in California the storage capacity is small as compared with that in the mid-continent zone of petroleum production. Hence, the remarkable activity in the sales of india-rubber hose to California petroleum producers.

Tariff on Materials Used in Rubber Manufacture.

Under the system now being followed, of taking up the tariff schedule by schedule, such analogous items as come under other schedules than those immediately under discussion, are necessarily left over for treatment in their turn under their proper heads. Hence in the subjoined extract dealing primarily with schedules A (chemicals) and C (metals), some articles are referred to which belong to Schedules B and G, which sections have not yet been taken up. These references also include certain free items which are appropriately considered with the dutiable schedules named.

It is to be regretted that the plan of the present tariff places the free list by itself at the end of the dutiable schedules, instead of letting it be divided under its appropriate heads, as has been done in the new chemical schedule.

In the statistical table published in the India Rubber World of July 1, 1911 (p. 380), the quantities and rates of duty under both the Dingley and Payne Tariffs are shown, while the annexed table deals with the present and proposed duties.

Schedules A (chemicals) and C (metals) at time of writing had passed the House of Representatives and were in the hands of the Senate. The rates and equivalents quoted are therefore subject to change in committee, in debate or in conference; only so far affording a general idea of the tendency of the present tariff proposals.

Where goods now free are made dutiable the prospective imports are assumed to be on the same basis as the latest available returns.

The so-called "basket clause" including chemicals not otherwise specified and which forms in the present tariff paragraph 3 at 25 per cent. appears in the proposed measure as paragraph 5 at 15 per cent. This clause should thus affect new chemicals, though under the "similitude" theory they might be claimed by the customs officials to be covered by one or other of the specified paragraphs.

PROPOSED CHANGES IN DUTIES ON PRINCIPAL MATERIALS USED IN RUBBER MANUFACTURE.

	Present Duties.	Ad Valorem Equivalent.	Proposed Duties.	Ad Valorem Equivalent.	Minimum Duty.
Acetone	25%	25%	1c. lb.	.....	.....
Acids.					
Carbolic	Free	Free	Free	Free	.....
Hydrochloric or Muriatic	Free	Free	Free	Free	.....
Sulphuric	¼c. lb.	8.63%	Free	Free	.....
Ammonia.					
Carbonate	1½c. lb.	27.73%	¾c. lb.	13.86%	.....
Asbestos.					
Unmanufactured	Free	Free	(Schedule B)	Not taken up	.....
Antimony.					
Crude Ore, etc.	1c. lb. on antimony contents	28.90%	10% on antimony contents	10%	.....
Oxide	½c. lb. and 25%	57.38%	25%	25%	.....
Asphaltum or Bitumen.					
Crude	$1.50 ton	35.28%	(Schedule B)	Not taken up	.....
Dried or advanced	$3 ton	29.63%	(Schedule B)	Not taken up	.....
Burgundy Pitch	Free	Free	(Schedule B)	Not taken up	.....
Chalk.					
Unmanufactured	Free	Free	Free	Free	.....
Ground, precipitated, etc.	1c. lb.	39.37%	Ground, 10% Precipitated, 25%	10% 25%	.....
Balsams.					
Canada	Free	Free	Crude, 10% Advanced, 15%	10% 15%	.....
Storax	Free	Free			.....
Tolu	Free	Free			.....
Cadmium	Free	Free	No change	Free	.....
Chloride of Calcium	25%	25%	Free	Free	.....
Coal Tar.					
Crude and pitch of	Free	Free	Free	Free	.....
Benzol, etc.	Free	Free	5%	5%	.....
Emery and Corundum.					
Emery Ore	Free	Free	(Schedule N)	Not taken up	.....
Corundum, abrasive	Free	Free	(Schedule N)	Not taken up	.....
Crude, artificial abrasives	10%	10%	(Schedule N)	Not taken up	.....
Grains and ground—					
Corundum	1c. lb.	16.98%	(Schedule N)	Not taken up	.....
Emery	1c. lb.	22.56%	(Schedule N)	Not taken up	.....
Fullers' Earth.					
Unwrought and unmanufactured	$1.50 ton	19.32%	(Schedule B)	Not taken up	.....
Wrought and manufactured	$3.00 ton	32.65%	(Schedule B)	Not taken up	.....
Glycerine.					
Crude	1c. lb.	11.29%	1c. lb.	11.29%	.....
Refined	3c. lb.	10.63%	2c. lb.	7.10%	.....

	Present Duties.	Ad Valorem Equivalent.	Proposed Duties.	Ad Valorem Equivalent.	Minimum Duty.
GUMS.					
Copal	Free	Free	½c. lb.	About 8%	.....
Kauri and Damar	Free	Free	1c. lb.	About 7%	.....
LANOLIN AND WOOL GREASE.					
Lanolin	25%	25%	(Schedule G)	Not taken up	.....
Wool Grease, Crude	¼c. lb.	14.53%	(Schedule G)	Not taken up	.....
Wool Grease, Refined	½c. lb.	15.15%	(Schedule G)	Not taken up	.....
MAGNESIA.					
Calcined	7c. lb.	43.27%	3½c. lb.	21.63%	.....
MICA.					
Unmanufactured, or rough trimmed	5c. lb. and 20%	36.31%	(Schedule B)	Not taken up	.....
OILS.					
Castor	35c. gallon	34.94%	20c. gallon	20.00%	.....
Cotton Seed	Free	Free	Free	Free	.....
Linseed	15c. gallon	27.11%	13c. gallon	23.00%	.....
Palm	Free	Free	¼c. lb.	About 4%	.....
Rapeseed	10c. gallon	23.05%	10c. gallon	23.05%	.....
PAINTS AND COLORS.					
BARYTA.					
Sulphate of, or Barytes.					
Unmanufactured	$1.50 ton	59.11%	15%	15%	40c. ton
Manufactured	$5.25 ton	52.11%	20%	20%	$1.30 ton
BLACK.					
Made from bone, ivory or vegetable substances	25%	25%	15%	15%	.....
BLUES.					
Prussian, etc.	8c. lb.	44.23%	20%	20%	3c. lb.
Ultramarine	3c. lb.	32.22%	20%	20%	2c. lb.
Cobalt and ore	Free	Free	Free	Free	.....
Oxide of cobalt	25c. lb.	24.14%	10c. lb.	9.50%	.....
GREEN.					
Chrome green	4½c. lb.	25.98%	20%	20%	3c. lb.
LEAD.					
Litharge	2½c. lb.	53.32%	25%	25%	1c. lb.
RED.					
Vermilion Reds.					
Containing quicksilver	10c. lb.	17.53%	15%	15%	7½c. lb.
Without quicksilver	4⅞c. lb.	29.41%	25%	25%	4c. lb.
Venetian Red	30%	30%	(Crude) 10%	10%	.....
WHITING, ETC.					
Whiting and Paris White, dry	¼c. lb.	43.98%	1/10c. lb.	17.50%	.....
ZINC.					
Oxide, dry	1c. lb.	17.47%	15%	15.00%	.....
White Sulfid or Sulphide	1¼c. lb.	41.85%	15%	15.00%	6/10c. lb.
PLUMBAGO	Free	Free	(Schedule B)	Not taken up	.....
POTASH.					
Bichromate	2¼c. lb.	45.86%	1c. lb.	20.00%	.....
Caustic—					
Not refined	Free	Free	6/10c. lb.	About 15%	.....
Refined	1c. lb.	12.75%	1c. lb.	12.75%	.....
PUMICE STONE.					
Unmanufactured, valued $15 or less per ton	30%	30%	(Schedule B)	Not taken up	.....
Unmanufactured, valued over $15 per ton	$5 ton	7.70%	(Schedule B)	Not taken up	.....
Wholly or partly manufactured	⅜c. lb.	67.57%	(Schedule B)	Not taken up	.....
ROTTEN STONE	Free	Free	(Schedule B)	Not taken up	.....
SODA.					
Caustic	½c. lb.	15.39%	¼c. lb.	7.69%	.....
SULPHUR.					
Sublimed or flowers	$4 ton	13.73%	In any form, Free	Free	.....
TALC.					
Ground, powdered or prepared	35%	35%	15%	15%	.....
TURPENTINE.					
Venice	Free	Free	(Schedule B)	Not taken up	.....
WAX.					
Mineral	Free	Free	(Schedule B)	Not taken up	.....
Vegetable	Free	Free	(Schedule B)	Not taken up	.....

THE RUBBER TRADE IN AKRON.

By a Resident Correspondent.

ON March 16 the Board of Directors of the B. F. Goodrich Co. sent a notice to each of their stockholders calling a special meeting of the stockholders to be held March 27, 1912, which notice was as follows:

To the Stockholders of The B. F. Goodrich Co.

Notice is hereby given that a special meeting of the stockholders of The B. F. Goodrich Co. will be held at the office of the Company in Akron, Ohio, on Wednesday, March 27, 1912, at eleven o'clock a. m.

Said meeting is called for the purpose of considering and determining whether to adopt a certain agreement authorized by the Board of Directors of said company, at a meeting thereof held March 16, 1912, subject to the adoption thereof by the stockholders at the meeting thereof hereby called, providing for the sale and transfer, to a new corporation to be organized under the laws of the State of New York, or of such other State as counsel for this company may agree to, of the entire property, assets, business and good-will of said The B. F. Goodrich Co., as of April 1, 1912 (except only certain sums in said agreement provided to be retained by this company), subject to all the liabilities of said The B. F. Goodrich Co. as of April 1, 1912, which are to be assumed by the purchasing company; said new corporation to have an authorized capital stock of $45,000,000, divided into 450,000 shares of the par value of $100 each, of which 150,000 shares, of the aggregate par value of $15,000,000, will be seven per cent. cumulative preferred stock with dividends cumulative from April 1, 1912, and 300,000 shares, of the aggregate par value of $30,000,000, will be common stock, at least three per cent. of the preferred stock to be retired in each year after July 1, 1913, from the net surplus profits of the new company before dividends may be paid on the common stock. Said agreement provides for the sale to the bankers therein mentioned of 78,000 shares of said new preferred stock and 30,000 shares of said new common stock for the sum of $7,800,000, together with an amount equal to the accrued dividends from April 1, 1912, on 78,000 shares of preferred stock; and said bankers further agree if required so to do by this company, to purchase all or such part of an additional 66,667 shares of said new common stock at $67.50 per share, as this company may elect to sell as provided in said agreement. Said agreement also reserves to certain stockholders of this company the right to purchase from said bankers at par and accrued dividends, all of such part, as said stockholders may elect to purchase as provided in said agreement of 28,000 shares of such new preferred stock so sold to said bankers.

Said agreement further provides that none of the stock of the new company received by this company or its stockholders shall be sold, distributed or otherwise disposed of during six months from the time of delivery of stock to the bankers, except with the consent of the bankers. The charter of the new company will provide substantially that, until the holders of two-thirds in interest of each class of stock shall otherwise direct, the new company shall pay such amount of corporate, franchise and property taxes in the State of Ohio, as may be required by the laws of Ohio to render its stock exempt from taxes in Ohio. A copy of said agreement, to which is attached a copy of the proposed certificate of incorporation of new company, is on file and may be examined by the stockholders at the office of this company.

If the said agreement is adopted, 72,000 shares of the preferred stock of the new company, or the proceeds of all or such part thereof as may be sold to the bankers, as above stated, will be distributed pro rata among the holders of preferred stock of this company.

Whether you expect to be present or not, please sign and return the enclosed proxy to the secretary in the enclosed envelope, in order to make certain that your stock will be represented. If you are personally present, however, your proxy will not be used.

By order of the Board of Directors.

B. G. Work, President.

C. B. Raymond, Secretary.

The stock transfer books will remain closed until further order of the Board.

March 16, 1912.

This notice was accompanied by a communication from the directors as below:

Akron, Ohio, March 16, 1912.

To the Stockholders of The B. F. Goodrich Co.

Referring to the notice this day sent you, calling a special meeting of stockholders of The B. F. Goodrich Co. to be held at the office of the company on March 27, 1912, the undersigned members of the Board of Directors desire to make the following statements:

1. We are all in favor of the execution and carrying out of said agreement and the plan therein set forth, and we intend at said meeting to vote in favor of the adoption of said agreement, and other large stockholders have expressed a like intention.

2. The moneys referred to in said notice as being retained by The B. F. Goodrich Co. are intended for the payment of the necessary expenses, and also the dividend on the present preferred stock for the quarter ending March 31, 1912, and dividend on the common stock.

3. The adoption of the agreement involves the distribution or payment to the holders of preferred stock of 1.2 shares of new preferred stock or $120 per share in cash, at their option, and to the holders of common stock of substantially 2.7 shares of new common stock and $78 in cash for each share of the present common stock.

4. The holders of a controlling interest in the present stock will become the holders of a controlling interest in the new stock, and the agreement also provides for the continuation of the business under the present management.

5. The proposed sale involves no commission or compensation of any kind to any of the officers or directors of the company and no officer or director of the company has any other than the same financial interest that every other stockholder has in said agreement and the sale therein provided for.

6. The three stockholders, parties to the agreement, have reserved, on behalf of all holders of the present common stock desiring to join therein, the right to purchase from the bankers, as stated in said notice, all or any part of 28,000 shares of the new preferred stock at the par value thereof and accrued dividends thereon from April 1, 1912.

7. The legality of the plan outlined in the agreement has been approved by counsel and said plan unanimously approved by the undersigned, being all the members of the Board of Directors except only C. C. Goodrich, who is abroad, but who has cabled his concurrence therein.

Upon the adoption of said agreement by the stockholders at their meeting on March 27, 1912, all the stockholders will be notified thereof, and proper forms will be sent them for the purpose of indicating their election as to sale or conversion of their preferred stock, and purchase of the 28,000 shares of new preferred stock and for covering their other rights reserved in said agreement.

B. G. Work. C. B. Raymond. W. A. Means.
F. H. Mason. H. E. Raymond. E. C. Shaw.

* * *

Immediately upon the issue of these two notices a violent movement took place in the market quotations for the stock. The common stock, which had been selling at 257, went to 300 and then to 350. It then fell to 275 on the offering of large blocks

of stock. Later it rose to 280. The future price of this stock will be influenced by the price at which the new shares of stock are placed on the market.

The fluctuation in Goodrich stock had a slight effect on other stocks in the city. Diamond Rubber stock immediately rose to 315, but as soon as the flurry was over became steady at 298. 365 is bid for Goodyear stock, but there is none in sight lower than 377. Swinehart Tire and Rubber Co. stock jumped to 123 and is steady at 120. Miller Rubber Co. stock jumped from 140 to 162 and is now steady at 160. Firestone stock is strong at 225.

The reorganization plan as given in detail in the first circular reproduced above was carried at the meeting of stockholders, held on March 27, almost unanimously, 95 per cent. of the common stock, and 98 per cent. of the preferred stock being voted for its adoption.

* * *

John Gammeter, experimental engineer for The B. F. Goodrich Co., and Lester Weeks, the aviator, are opening up an aviation school at Akron. They have secured several aeroplanes and at present are practising on the grounds of the Country Club at Akron, Ohio. They expect to open a regular aviation field about April 1 at one of the lakes about Akron so that the hydroplanes as well as the aeroplanes can be used. The flying will be in charge of Mr. Weeks, who has been in the aviation game since its infancy and has become a very successful aeronaut.

* * *

The Swinehart Tire and Rubber Co. has opened up a new agency at 1013 S. Main street, Los Angeles, California, in charge of W. B. Guyton; another at 323 Seventeenth avenue, Denver, Colorado, in charge of Gessler Williams; another at 46 E. Walnut street, Columbus, Ohio, in charge of S. Neil Hallock. The former Chicago branch manager of this company, C. W. Harris, has resigned and R. L. Frewin takes his place. Three new salesmen have been added to the Chicago office, J. B. Benton, J. W. Hansen and R. A. Kerr, and the Akron sales force has also been increased by securing the services of John Allen and Harry Carnahan. J. D. Taggert, formerly with The Ajax Tire and Rubber Co., and G. M. Griffith are connected with the Philadelphia branch.

* * *

The Goodyear Tire and Rubber Co. have opened a second branch in Chicago to take care of the retail trade. The main branch remains at 177-179 Michigan avenue and the second is located at 2118 S. Michigan avenue, having J. C. Zimmerman in charge. The second branch will be used for dealers and users of Goodyear tires.

* * *

E. W. Snyder, the chemist for The American Tire and Rubber Co. has met with success in compounding Pará and mineral rubber. This company uses his method of splicing by steam curing, thus strengthening the splice.

* * *

The McGraw Tire and Rubber Co., of East Palestine, Ohio, has secured several acres of additional railroad frontage in anticipation of the enlarging of their plant to take care of the increased sales of tires.

THE RUBBER TRADE IN BOSTON.

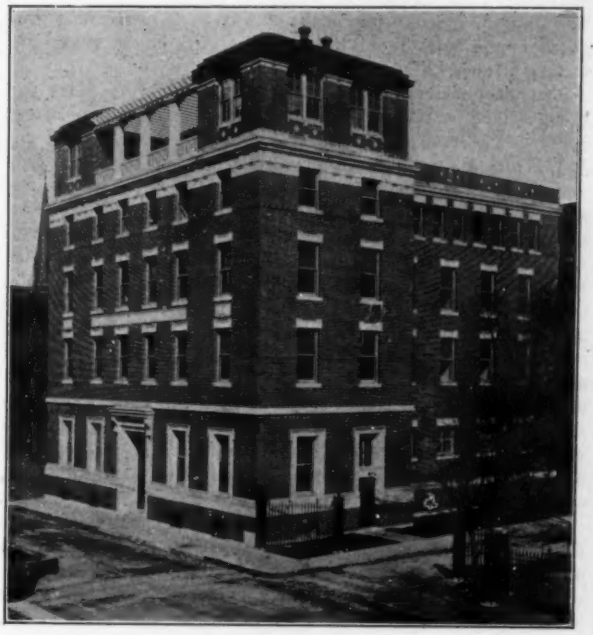
By a Resident Correspondent.

THE principal event of interest in the rubber trade in this city the past month was the Automobile Show, which has become so big that it had to be divided into two distinct shows. The real Show (with a capital S), was held first, when the pleasure motor cars were the principal attraction, and after this came another week when trucks and business vehicles were exhibited. These exhibitions gave the usual opportunity for tire manufacturers to exploit their wares, and they did so to an extent heretofore unequaled at a Boston exposition.

The tire business is lively—very—and all the agencies here are reporting an excellent business. Those factories hereabouts which make tires are rushing to the full capacity of their output. And the footwear manufacturers are likewise busy. The return to the policy, by rubber shoe manufacturers, of giving an extra five per cent. for early orders has enabled the salesmen to book a splendid volume of advance orders, which will assure the running of the mills until the actual consuming demand begins to be felt. In mechanical goods, the prospects may not be quite so brilliant, but a good business is doing in spite of a show of conservatism on the part of some customers, as evinced by the retail character of the orders.

* * *

Boston has another cause to be thankful that there have been fortunes made in the rubber business. But recently mention was



EVANS MEMORIAL BUILDING.

made in these pages of the Forsyth Dental Infirmary, a noble memorial to James Bennett Forsyth and George Henry Forsyth. Last month in this city the Robert Dawson Evans Memorial Building was dedicated. This is an addition to the Massachusetts Homœopathic Hospital and is the gift of Mrs. Evans. At the dedication, Dr. Frank C. Richardson presented the hospital, in behalf of Mrs. Evans, who was present.

In accepting the building, President Edward Haven Mason gave a brief history of the hospital, and at the close of his address presented to Mrs. Evans a beautiful gold key, in a silk-lined leather case.

The opening addresses were followed by brief remarks by Lieut.-Gov. Luce, who represented the Commonwealth in the absence of Gov. Foss. President Attridge, of the Boston City Council, accepted the gift in behalf of the city, in the absence of Mayor Fitzgerald. Other speakers were President Merlin, of Boston University; President MacLaurin, of the Massachusetts Institute of Technology, and Dean J. Sutherland, of Boston University School of Medicine.

The exercises were closed by invocation by the Rev. Edward Cummings.

The building is of brick with limestone trimmings. On the main floor is a lecture hall with a seating capacity of 250, in which popular lectures on hygiene will be given. There are also sev-

eral offices and examination rooms. The second and third floors are fitted up as a hospital proper in the most up-to-date manner, there being several private rooms, as well as small wards. There are also accommodations for the resident nurses. The fourth floor contains seven large laboratories for physical research, the museum, and rooms for physicians and nurses.

This splendid addition to the hospital will add largely to its usefulness to the profession and the public, and as a monument to the memory of R. D. Evans, it will be a blessing to hundreds, and perhaps thousands in the years to come.

* * *

The death recently of two members of the old auction house of Johnson, Moody & Co. brings to mind the rubber shoe auctions which were an annual feature of the trade the last quarter of the nineteenth century. This method of selling the excess stocks of rubber footwear at the end of the season was an evolution from the older custom in the shoe trade of distributing these goods in the most direct, though not always in the most satisfactory manner.

Shoe manufacturers, in the old days of 50 or 75 years ago, brought their wares to Boston, and consigned them to auction houses. The two principal ones were J. H. Lester & Co. and J. J. Henry & Co. Buyers representing the wholesale shoe dealers of the South and West attended the weekly auctions, and shipped their purchases to the houses they represented. Sometimes a few rubber boots and shoes would be included in these weekly sales. But in 1875 a large consignment of Meyer Rubbers were offered, and quickly snapped up. The success of this led Johnson & Moody, who succeeded J. H. Lester & Co., to hold a rubber auction in 1877, when there were offered thousands of cases of rubber boots and shoes, factory-damaged, out-of-style, and left-over stock. Buyers flocked to Boston to attend the auction. Mr. Nazro officiated as auctioneer, and on the first day for eleven hours he averaged 200 sales per hour, yet the next day, and the third he kept up the pace, and that auction went down in history as the inauguration of a new system of getting rid of all manufacturers' excess stock at the end of the season.

Each year thereafter the rubber auction was a regular established feature of the footwear trade, but after a while it was proven beyond a doubt that it tended to hinder the regular trade, buyers holding off until the auction. One of the largest buyers of these stocks was Wm. F. Mayo & Co., or their predecessors, Edmonds & Mayo, and a few years ago arrangements were made with this house to take and distribute such excess goods of the United States Rubber Company, when the Mayos discontinued their leather shoe business and have ever since dealt almost exclusively in rubber footwear. And that was the end of the rubber shoe auctions which used to bring to Boston hundreds of buyers from all parts of the country.

* * *

Francis H. Appleton is back from his Panama trip, which so delighted him that he has sent his son, F. H., Jr., over the same route and at present writing the latter is in Jamaica automobiling over its splendid roads and enjoying its beautiful scenery.

* * *

The Rubber Scrap Dealers Club and the Rubber Reclaimers Club will work together to secure better packing of waste rubber, and will endeavor to eliminate some of the evils which have crept into the trade.

* * *

President Hood and Vice-President Appleton, of the Rubber Club of America, attended the luncheon of the National Association of Manufacturers at the Algonquin Club, March 19.

* * *

Wallace Page, of the Shawmut Tire Co., put up an interesting and handsome exhibit at the Automobile Show, which was to some extent a duplicate of that shown at the New York exhibition, with certain amendments and improvements. The rubber tree was there, with its herring-bone tapping, but the latex refused to flow, owing to some defect of the internal mechanism. However, the public was interested in the constructional exhibit of the tires, and orders are coming in for the non-skid block tread tires in satisfactory amounts.

THE RUBBER TRADE IN CHICAGO.

By a Resident Correspondent.

THE offices of the Chicago Rubber Clothing Co. will be removed on May 1 to the eleventh floor of the new North American building, South State and West Monroe streets. The new building is one of the most conspicuous, from an architectural standpoint, in the downtown district, and is located in the heart of the business section. The company at present is located at 208 North Fifth avenue.

* * *

Chicago tire men are greatly interested in the fate of a bill proposed in the State of New York to compel tire makers to place the date of manufacture on their products. Protests against such legislation is heard on every hand. J. C. Matlack, of the Ajax-Grieb Rubber Co., is one of those opposed to the bill.

"The bill will impose an unnecessary restriction on the trade and will create a false impression in the minds of dealers and consumers," he said recently. "The average tire is not a bit worse off for six months' or a year's seasoning, and probably the better for it, yet the consumer, looking at the tire, is bound to say: 'I don't want an old tire. Give me a fresh one, a new one.' If the dealer tries to say that the tire is no worse off for being a few months old, the customer will likely put his remarks down to self interest. The dealer won't want to carry stock if it must be dated, and so the burden will fall upon the shoulders of the manufacturer. The bill is not needed, and if it becomes law will give rise to a complex and difficult situation. It will not serve the public interest as far as I can see."

* * *

The Punctureless Tire Co., of Illinois, recently moved its offices one block south in Michigan avenue to new quarters at Nos. 1323-25. On account of increased business, larger offices were needed, and one more room has been added in the change. The concern claims that the Dahl Tire filler is the answer to the question of why there has been such an increase.

"Our newspaper advertising during the last two weeks has brought us more than 4,000 inquiries, which shows that people are looking for something in this line," said Mr. Hagerling, of the Punctureless Tire Co. "It is an assured fact that the perfection of a tire filler will do a great deal to promote the use of motor cars."

* * *

W. W. Wuchter, general manager of the Swinehart Tire and Rubber Co., is one of the enthusiasts on the subject of tires for commercial cars. Recently he said:

"In claiming a large share of the credit for the advancement of the commercial truck industry we do not hesitate to admit that tires are usually the largest item of expense connected with the up-keep of the commercial car. Nevertheless we have made real progress toward remedying these conditions. Three years ago there were no demountable tires on the market. We were convinced that it was necessary and our present type has been on the market for nearly three years."

* * *

Another deal which marks the exodus of the wholesale rubber goods concerns from the congested downtown district to the West Side, was a recent transaction closing the lease of a four-story building to be erected at 210-12 South Jefferson street to the Beacon Falls Rubber Shoe Co., of Beacon Falls, Connecticut. The new building will have a ground area of 70 x 150 feet and will be equipped with elevators, automatic sprinklers and heating

plant. The lease runs for a term at an aggregate rental of $90,000. The Beacon Falls company at present is located in quarters at 307 West Monroe street, in the heart of the wholesale rubber goods district.

THE RUBBER TRADE IN RHODE ISLAND.

By a Resident Correspondent.

FEBRUARY and March brought a decided improvement to the rubber trade in all parts of Rhode Island. Increased orders were so much in evidence that the National India Rubber Co. at Bristol announced a decided enlargement of output during the latter part of last month, and the Woonsocket Rubber Co. rushed its annual stock-taking at the Alice and Millville mills for the purpose of getting it over as quickly as possible.

At the Alice mill of the Woonsocket concern the last day of making before starting the work of going over the stock was on March 27. Operations will be resumed on April 4. This was really devoting only five days to an undertaking that usually takes a full week. At the Millville mill the time was even shorter, from March 28 to April 3. Full forces will be taken on at each plant at the reopenings. Fifty-six hours a week in the Woonsocket plant and fifty-four at that in Millville are the schedules, the full legal limits in Rhode Island and Massachusetts.

* * *

The first real rush of the season began at the plant of the National India Rubber Co., Bristol, March 6. This resulted in the re-employment of nearly 200 hands who were thrown out of work when three departments were closed and moved to Cleveland, Ohio.

The orders were for footwear, principally arctics and tennis shoes. An increase in output from 23,000 pairs of footwear daily to between 26,000 and 27,000 has been made since that time. Le Baron C. Colt, agent for the company, stated that he expected a continuance of the good business at the time, and his expectations have been fulfilled thus far.

Business in the wire insulation department of this plant is so brisk that it is being kept open up to 10 or 12 o'clock every week night.

* * *

It required seventy-eight freight cars to move the machinery of the closed departments at the National India Rubber Co.'s plant, Bristol, to Cleveland, Ohio.

* * *

The Roger Williams Printing Co. was incorporated recently at the State House, Providence, Rhode Island, for the purpose of engaging in that city in the manufacture, printing and dealing in textile and rubber goods and supplies. The incorporators were Alfred G. Chaffee, E. G. Luther and John A. Tillinghast. The capital stock is $5,000.

* * *

One result of the success of Colonel Samuel P. Colt in regaining the management of the Industrial Trust Co., Providence, recently has been the closing of the Mechanics' Savings Bank, an old institution which has been located not far from the Industrial Trust headquarters on Weybosset street, but which has been a subsidiary of the big concern for years. The business of the branch is to be carried on in the rooms of the Trust company.

* * *

The Bourn Rubber Co. and the Cooper Hose Mender Co., Providence, are among several hundred business concerns in this city which have petitioned the Special City Council Committee on Lighting Franchises to give the Connecticut River Power Transmission Co. permission to enter this city. The franchise of the Narragansett Electric Lighting Co., of which Arthur L. Kelley is president and Colonel Samuel P. Colt a director, expires this year, and an effort is being made to prevent it from again securing exclusive rights.

The plan of reorganization of the Consumers' Rubber Co., proposed by the receiver and a committee of stockholders as a result of the financial difficulties which the concern found itself in shortly before Christmas, was discussed at a meeting held March 27.

Since the beginning of the receivership the plant has been in operation, but Terence McCarty, general manager, has been made defendant in a half dozen law suits, and banks have been filing suits against each other over the payment of notes. The last suit filed in the Superior Court was that of Tobias Burke, claiming $7,500 damages on a $5,000 note, made December 26, 1911. A writ of attachment was filed so as to cover the real and personal property of the company.

If the reorganization plan is accepted, the concern will be sold to a company which will issue certificates of indebtedness which it will be compelled to retire before paying dividends on its own stock. This will not, it is expected, settle all of the court litigation, however, unless an agreement is reached.

* * *

Several employes and officials of Bristol's rubber concerns are active in an Improvement Association, formed on March 5, for the purpose of booming the town.

* * *

A wind storm recently took off a portion of the roof of the Colt High School, presented to the town of Bristol by Colonel Samuel P. Colt. The occurrence caused general amazement, as the building is a palatial structure, in the construction of which no expense was spared.

* * *

James Scott, for many years a teamster and later a clerk for the National India Rubber Co., Bristol, Rhode Island, died at midnight, March 8, at his home, corner of Hope and Franklin streets, in that town. He was 56 years old. Two daughters and two sons survive. The funeral was held Monday, March 11, at St. Mary's Church.

THE RUBBER TRADE IN SAN FRANCISCO.

(By a Resident Correspondent.)

EVERYTHING seems to be shaping up most favorably for California this year. During the month of February there was an almost total lack of rain, and the future began to look dubious. But just before the grass and grain had begun to suffer from the long-continued drought, a storm broke over the entire State of California, and since then, during most of March there have been continued rains, so that instead of a dry year this State will now enjoy one of the most productive summers of its whole history. In fact, conditions were never more favorable for banner crops than they are at this time, and it is more than probable that an era of unusual prosperity is at hand. Unquestionably the rubber industry will receive its fair share of the benefits, and the rubber merchants are consequently in a very optimistic frame of mind.

* * *

R. H. Pease, president of the Goodyear Rubber Co., reports that business is steadily forging ahead, and that each week shows an increase in business over the same period last year. "The fine rains which we have had since the first of this month," he said, "are very encouraging, and our customers naturally used up their stocks of boots, shoes and rubber clothing, so that they have been reordering liberally. The snow in the mountains will have another beneficial effect by furnishing water later on in the summer for hydraulic mining and irrigation, which means prosperity to the State and business for rubber merchants."

* * *

The Western Belting and Hose Co., 518 Mission street, has opened a very attractive branch store in Los Angeles. The new

store is under the management of Mr. Gilmer of that city. It is located at 328 East Third street, in a rapidly growing business center.

* * *

George Dodge, now of the Mineralized Rubber Co., of New York, is now in San Francisco visiting his brothers, who are connected with the Western Belting and Hose Co. of this city.

* * *

B. S. Gibbs, representing the Manhattan Rubber Co., is now making a visit in San Francisco.

* * *

C. A. Wilhoft, manager of the packing department of the New York Belting and Packing Co., of New York, is spending a few days in San Francisco, visiting the company's local branch.

* * *

W. J. Gorham, of the Gorham-Revere Rubber Co., has just completed a combined gasoline engine and pump which will prove most efficient and successful in the fire service. He has reduced the weight and increased the efficiency to such an extent that he has now an engine and pump which can be carried on an automobile truck and which will do the work of the best steam engines, without danger of breaking or stalling, which has heretofore been the objection to gas engine pumps. The pump was completed several months ago, and the best engineers report that its efficiency surpasses anything of its kind. The difficulty was to get a light engine of the desired power. He adopted the multiplex compressor system to provide the engine with a steady pressure whenever the streams were shut off. The engine weighs only 2,600 pounds and has 136 horsepower. Mr. Gorham does not claim any new invention, but he has used the best modern ideas to get an engine that was good and at the same time light. The ordinary engine to do the same amount of work will weigh nearly 20,000 pounds.

* * *

M. Sawyer, of the Sawyer Oil Clothing Co., was a recent visitor in San Francisco.

* * *

Mr. Spadone, manager of the Eastern offices of the Gutta Percha and Rubber Manufacturing Co., has just returned East after a visit to the coast branch.

* * *

A new portable hose rack has been invented by some of the boys at the offices of the Gutta Percha and Rubber Manufacturing Co., which promises to be a success.

* * *

E. G. Bernthal, special representative of the Goodyear Tire and Rubber Co., has been on an extended trip, visiting the branches and agencies throughout the Northwest.

* * *

Thomas Wilkenson, manager of the local branch of the United States Tire Co., recently called together a meeting of the salesmen for this concern, located on the coast. The occasion was the visit of R. R. Drake, manager of the service department of the firm at New York. Mr. Drake presided over the meeting and gave all present the benefit of his experience.

* * *

The Goodyear Tire and Rubber Co. of California is the name under which this company has incorporated in this State. The officers are: N. B. Taylor, president; L. Lingenfelder of Los Angeles, vice-president; J. F. Wise, secretary-treasurer. The board of directors will be N. B. Taylor, J. F. Wise and E. Lingenfelder, all California men, and H. B. Ball, of Akron, Ohio. The headquarters are in San Francisco. J. C. Weston, who has been district manager of this concern, has moved from San Francisco to Chicago to take charge of the Central district. C. A. Gilbert has gone from New York to San Francisco to take Mr. Weston's place. While here, H. B. Ball, who has charge of the company's clearing and auditing departments, spent some time in auditing the accounts here. He also looked after completing arrangements for the company's new quarters on Van Ness avenue and Sutter street.

* * *

The Acme Machine Co. of this city is meeting with excellent success with the air pocket tire which it recently patented.

The Standard Tire Protector Co., of Akron, has opened a branch office in San Francisco at the branch of the Goodyear Tire and Rubber Co. on Golden Gate avenue. E. C. Newbauer is the new coast manager.

A new corporation, known as the W. B. Guyton Tire and Rubber Co., has recently been organized in this city.

The Republic Tire and Supply Co. is the name of a new corporation just organized in San Jose by G. L. Fish, C. N. Hill, O. M. Fish and S. G. Thompkins, with a capital stock of $25,000, fully paid up.

The Plant Rubber and Supply Co. has been incorporated in San Francisco. The names of the incorporators are E. H. Pierce, A. A. Cailleaud, F. L. Fenton, H. C. Allen and J. V. De Laveaga.

THE RUBBER TRADE IN TRENTON.

By a Resident Correspondent.

THE employes of the Empire Tire Co. have formed an organization known as the A. R. Williams Social Club. The officers are: President, William J. Harney, Jr.; vice-president, W. Masterston; secretary, J. E. Childers; treasurer, A. W. Williams; trustees, N. Moncrief, W. Schultz, F. Taft, John Prince and William K. Ryan; sergeant-at-arms, Martin Burgess.

* * *

The Weldon Roberts Co., of Newark, New Jersey, has been incorporated in the Secretary of State's office with an authorized capital of $100,000. The concern is authorized to manufacture all kinds of rubber, but it is understood that its activities will be principally in pencil erasers, ink erasers and other stationers' rubber supplies.

Weldon Roberts is known to the trade as a high-grade rubber eraser maker of long experience. In December, 1910, Mr. Roberts disposed of his interests in the C. Roberts Rubber Co. (of which he was president, and which his uncle, Christopher Roberts, founded in the early fifties) to the Eberhard Faber Co., of New York City. He traveled for a year in Europe and saw much of rubber manufacturing conditions in France, Germany, Russia and England. He proposes to make good use of his experience gained in observation on the other side.

* * *

The Empire Rubber Co. has awarded contracts for the erection of three buildings to replace the buildings damaged last month by fire. The new buildings will be of brick and frame and will cost about $10,000. The buildings will be used for storage purposes.

* * *

The Crescent Belting and Packing Co. has installed a number of new braiding machines. This company is working day and night shifts in the effort to keep pace with the flood of orders sent in by the traveling men. The demand for the product manufactured by this progressive concern is increasing every month, and to handle the growing business it will be necessary in the near future to enlarge the plant, which now covers many acres in East Trenton.

* * *

C. H. Semple, president of the Empire Tire Co., has returned to Trenton after a two months' visit to Cuba, Bermuda, Palm Beach, Daytona, Florida; Camden, South Carolina, and other Southern points. President Semple returns much benefited in health. While in Havana he looked over conditions in the new Republic and got an insight into the methods of doing business in the island which will doubtless be of material benefit to his company.

GOODRICH CONVEYOR BELT

A REPRESENTATIVE product and in keeping with the Goodrich principles of reliability and fair dealing. Long years of experience have enabled us to develop the particular quality to form a reliable and economical belt, and both manufacture and selling are guided by an intimate experience of belt conveyor practice.

THE B.F. GOODRICH CO.
AKRON, OHIO, U.S.A.

NEW YORK BELTING & PACKING CO. LTD

ORIGINAL MANUFACTURERS

INTERLOCKING RUBBER TILING.

IT IS THE BEST FLOOR MADE
FOR CHURCHES, SCHOOLS, BANKS, PUBLIC BUILDINGS, THEATRES AND PRIVATE RESIDENCES, BEING SANITARY, NON-SLIPPERY, SOFT AND COMFORTABLE TO THE TREAD, BEAUTIFUL IN COLORS AND DESIGNS AND DURABLE.

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THOROUGHLY RELIABLE.

The policy of furnishing only the finest goods that can be produced with perfect materials, latest and best machinery, and highly skilled workmen of long experience, has been, is now, and will continue to be, the policy of

The Mechanical Rubber Company,

CHICAGO, ILL.

Branch Store, No. 1810 Blake Street, Denver, Colo., where we carry a full line of goods.

Manufacturers of all kinds of rubber goods for mechanical uses—Hose, Belting, Packing, Gaskets, Bicycle Tires, Specialties, Moulded Goods, Etc., Etc.

If you are unable to satisfy your trade with goods you are supplying,
If you are in search of good goods at fair prices,
If you cannot get quick deliveries,
If you are not getting fair value for your money,
IN ANY EVENT,

} **SEND TO US FOR SAMPLES AND QUOTATIONS. . . . .**
} **WE CAN SUIT YOU EVERY WAY.**

FACTORY, GRAND AVE. & ROCKWELL STS

THE MECHANICAL RUBBER CO., 230 Randolph St., Chicago, Ill.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

I UNDERSTAND that at the meeting of the India Rubber Manufacturers' Association in January, some divergence of opinion was expressed as to the policy of reducing the price of rubber goods, owing to the fall of Pará rubber to 4s. 4d. per pound. The advocates for no reduction were, however, in a minority and were outvoted. Their prediction, however, that the immediate future would show a rise in raw rubber values has proved quite correct, as 4s. 7d. to 4s. 8d. was the February figure. The prophecy of a rise rather than a fall in February was based, I believe, on the somewhat freely expressed opinion that London and Brazilian interests are acting in unison to keep up the price, 5s. per pound being the figure aimed at. It goes without saying that this concerted action is not altogether to the liking of the manufacturers, who think that the general situation in regard to supply and demand warrants a market quotation of about 3s. 9d. per pound.

THE COURSE OF PRICES.

Of course it is one of the most difficult things in the world to foretell the course of the rubber market, and this is by far the greatest source of the worry which the manufacturer experiences. Owing to the fact that many of our important firms are private companies, whose accounts are not published, we shall probably never know how many of the leaders of the industry were convinced that rubber was going to 15s. per pound, and consequently bought ahead. Certain names are permanently mentioned in this connection, but I should not be justified in recording them. The recent sales ahead of plantation rubber for two years at figures showing a reduction on present prices may be taken as indicating that no recurrence of the boom of two years ago is anticipated, and anyhow the losses that those firms which bought ahead at inflated prices have incurred will certainly act as a deterrent in the case of others, and therefore any incipient boom will not get the necessary support for its development.

NORTH OF ENGLAND MOTOR SHOW.

THIS show, promoted by the Society of Motor Manufacturers and Traders, Limited, was held at the Rusholme Exhibition Hall, Manchester, in February, and both in point of the number of exhibitors and the large attendance of visitors proved in every way a great success. In fact it was the largest show of the kind ever held outside London. Although automobiles of every kind for pleasure touring and commercial purposes were on view, perhaps the most noticeable feature was the low-priced two seater for which a largely increased demand is anticipated in the near future. This is the type of car for which a recent contributor to THE INDIA RUBBER WORLD announced that there was likely to be but little demand in Continental Europe. I can quite understand this, because on the Continent generally there is an absence of that large class of comparatively well-to-do people with incomes ranging from £500 to £1000 per annum, which is so characteristic of English middle-class life. Certainly in recent years, and more especially in Germany, the growth of industry, and its concomitant—the increase of national wealth—is tending to the production of a well-to-do middle class, resembling that of England; and this tendency will doubtless lead to an increased demand for lower-priced cars, such as are now wanted in England.

But to keep more particularly to the exhibits of the show, it must be said that while old friends as regards tires were there in force, there was little of real novelty which calls for special mention. Of comparatively new tires mention may be made of Almagam tires and Wood-Milne steel rubber tires. Quite a novelty was to be seen in the wheels shown by the Hawksley Pneumatic Wheel, Limited, of Manchester, and recently put on the market after some years' experiment and trial. It consists of a stamped steel plate with three or four circular apertures, in each of which is fitted a pneumatic cushion, composed of two outer discs and an inner tube, the cushions being held in position by two steel rims, one of which is detachable. I understand that the pneumatic cushions referred to are supplied by the Palmer Cord Tire Co., apparently being made of the best quality red rubber. Another novelty, also introducing rubbered cord, is the Marshall Tire of London, this having a wrapping of cord impregnated with rubber on its tread. Among the new comers at this show may be mentioned the Goodyear, representing the great Akron company. Most of the literature available to the public was of the usual type, descriptive of the merits of the particular exhibits, but special mention may be made of "A Book for Drivers," containing instructions for fitting, detaching and repairing tires, which was to be obtained for the asking at the Michelin stand, and which is replete with useful information.

UNITY RUBBER COMPANY, LTD.

THIS plant, which is situated at Pendleton, Manchester, adjoining the factory of Messrs. Mandleberg & Co, Limited, was offered for sale by auction on March 5, and was withdrawn, no offer above £3,000 being forthcoming—a figure which the auctioneer said he could not take seriously. It was announced that in the last four years £24,000 had been spent on the works, which were electrically driven throughout, and contained a complete range of the most modern machinery for mechanical rubber manufacture. The present lease expires in June this year, but an agreement has been made with Messrs. Mandleberg to give a new lease for 14 years at a yearly rent of £370 to any purchaser of the works, such lease to be determinable at the end of 7 years if the purchaser so desires. Messrs. Mandleberg are the principal proprietors of the present Unity company, but have decided not to go on with mechanical rubber manufacture. Great preparations had been made for the turning out of rubber heel pads, the moulds for this and for the tire business having cost about £4,000. There was quite a large gathering at the sale, and the fact that no genuine bid was made for the machinery is rather surprising. It was announced that the property would now be open to sale by private contract.

RECLAIMING NOTES.

AN interesting discussion took place recently in the pages of our London contemporary, as to whether it paid manufacturers to reclaim their own scrap rubber, and the views expressed were somewhat divergent. A good deal of course depends upon the amount and quality of the scrap available, and where it might pay one manufacturer, in other cases a different result might be experienced. This is leaving out of account altogether the technical skill with which the reclaiming is carried out. Here the ordinary works' manager may easily prove deficient, and the professional reclaimers say that the strong point of the product, as made at home, is that it does not have to be sold in the open market against competitive brands. I am inclined to think that there is something in this, especially as regards the higher-priced brands now so commonly sold by reclaiming works since the introduction of the alkali and analogous high-pressure processes. Where the reclaiming works will always have the advantage over the rubber factory is the better terms on which it can purchase its large requirements of scrap in the market.

A quite modern development in the reclaimed rubber trade, and one which had its origin on the Continent, is the demand

of the rubber manufacturer to have an analysis of the reclaimed rubber as a preliminary to purchase. It is now quite the common thing to supply no only the chemical analysis, but also the tensile strength. This procedure is not always to the liking of the reclaimers, but it has been forced upon them and they submit with as much grace as possible. Certainly this procedure is not universal, as at least one very important concern has hitherto declined to furnish the particulars asked for, and has announced its intention to continue business on the old lines. A difficulty arises in the fact that the reclaimers get no corresponding analysis from the rubber scrap merchant; therefore the stock which they buy, though sold as similar to previous deliveries, may differ sufficiently to cause trouble with the purchase of the reclaimed rubber, if he feels inclined to hold the reclaimer to the exact figures of the analysis he has submitted. It seems to me that a certain amount of latitude as regards the figures given must be recognized by the buyer as essential under the particular circumstances.

To refer to another topic the quotations for the price of scrap rubber in New York as given month by month in THE INDIA RUBBER WORLD, are of interest to reclaimers on this side, especially where they vary from English quotations. Some of the figures are practically identical. In other cases I note, taking the figures in the February issue, that motor tires and goloshes are rather cheaper in England, while cycle tires, garden hose and matting are dearer. By far the greatest difference is to be seen in the quotation for cab tires, the American being very much cheaper than the English. This, I am told, by a man who has had experience in reclaiming in both countries, is due to the inferior quality of the American tire. I am not saying this in any contentious spirit or with a desire to arouse the passions of my American readers, but merely pass it on as a plausible explanation of what has struck some people as an anomaly.

NEW RUSSIAN SYNTHETIC RUBBER!

With reference to the alleged sudden discovery of a synthetic rubber by Professor Ostromislensky, of Moscow, it is reported that in the course of a study of the properties of benzole, the above-named chemist discovered a substance very similar to rubber. In the further elaboration of this discovery he is said to have very soon produced a synthetic rubber quite equal to the natural product. Ultra-violet rays are understood to play a prominent part in this process of production. The price is stated to be 23 rubles per pud (about 33 cents per pound), and the organization is reported of a company to exploit the invention.

Commenting upon the above statements, the "Gummi-Zeitung" remarks:

"The statement that this report has caused great sensation in the rubber industry is in every respect incorrect; experts have not been disturbed. Why should not a Russian scientist succeed in discovering synthetic rubber, after this has already taken place in Germany and England?

"That is, however, all. That thereby the product is already on the market, that a fixed price can be quoted for it, that its properties have been tested, etc., we doubt on the basis of the experiments made in this branch.

"Synthetic rubber does not appear suddenly; it does not in a single day become an industrial product. Whether Germany, England or Russia may first succeed in producing it in marketable condition, remains to be seen.

"For the present we are still pretty far distant from this end, and even in Moscow there are no new hitherto untried materials available as sources. For the present there is, consequently, no ground for anxiety."

A Swiss firm with an extensive business in all parts of Switzerland, desires the agency in that country for American rubber novelties, according to Consular Report No. 8,090.

PROPOSED FRENCH DUTY ON RUBBER.

By a motion submitted to the French Chamber of Deputies, it has been proposed to levy a duty upon rubber from countries other than the colonial possessions of France. In advocating this measure it has been urged that the French colonies are at a manifest disadvantage, as compared with the older and better supported possessions of other countries. The necessity is further indicated of opening up new territory for rubber and extending the production of existing sources of supply, with a view to attracting capital to the national colonies.

The fact is likewise prominently brought forward that rubber is the only French colonial product not favored by the French tariff.

In their patriotic zeal, these French legislators seem to have ignored the fact that the rubber production of the French colonies is far from being sufficient to cover the requirements of their national rubber industry. Moreover, the grades there produced are not regarded with the same favor as those from other sources. Satisfaction has been expressed at the French Minister of Commerce having declared himself as being opposed to the idea of a duty on rubber.

TIRE PRINCIPLES MATHEMATICALLY EXPRESSED.

In an address recently delivered by Professor André Michelin before the Society of Civil Engineers of France, some interesting statements were made relative to the relations between the weight placed on a pneumatic tire and the amount of wear to be secured from the tire. The professor said:

"We have experimented to discover the relation existing between the lasting power of a tire and the weight it supports, and from the results of a great number of tests we have been able to deduce this empiric law: That the mileage of a tire is inversely proportionate to the cube of the weight it supports.

"Thus if the weight is doubled, the wear will be approximately eight times more rapid. If the weight be increased by even so little as 5 per cent., the wear on the tire will be increased about 14 per cent. . . . The solid rubber tire has been retained simply to lessen the noise and reduce the violence of the jolting."

He also made another exceedingly interesting statement regarding the incompressibility of rubber:

"Rubber, unfortunately, although elastic to a remarkable degree and extremely pliable, is nevertheless almost incompressible; much more so, indeed, than the greater number of solid bodies—a strange fact, which is but little known.

"Consequently, tires made of solid rubber give practically the same result as if hollow and filled with water. With such a tire, a jolt would cause but a very small alteration in its shape, on account of the slight displacement of the molecules of water, which move slowly among themselves.

"But in an air-filled tire a similar jolt would cause a great change in shape because of the instantaneous displacement of a complete layer of the compressed air, the molecules in this case being extremely rapid in their movement."

A French patent has been issued for a process of applying rubber to the manufacture of billiard cues.

Paris trade advices state that in 1910 France exported 4,765,420 pounds of rubber tires, valued at $5,334,387. The sales were to all the leading countries of the world.

CESSATION OF BOHEMIAN RUBBER FACTORY.

It is reported that the machinery and stock of the Graslitz (Bohemia) Rubber Works have been purchased by a German rubber factory; it not being in contemplation to again operate the Bohemian concern.

SOME RUBBER THAT STUMPED THE EMPEROR.

EVERYBODY at all familiar with the history of the rubber industry will remember the great furor created in the World's Fairs held in the "fifties" in London and Paris by Charles Goodyear's rubber exhibit. If anything, the Parisians were more excited over it than the English were. A great many stories showing the absorbing interest taken in Goodyear and his wonderful rubber display have been preserved in the literature of this industry, but here is a new one that appears in a book entitled "Memoirs of Many Men," written by Maunsell B. Field, who was the United States Commissioner at the World's Fair in Paris held in 1855, which shows that the Emperor Louis Napoleon, while greatly attracted by what Goodyear had to show, was a little confused in his deductions because of the military tinge which his thoughts naturally took. He saw a pile of large rubber balls and immediately concluded that they must be cannon balls; but here is the way Mr. Field tells the story:

"The Emperor approached me and remarked that he had that afternoon walked through our department of the exposition—this was just before it was open to the public—that he had seen many things there which interested him, but that nothing had so much pleased him as the exhibition of vulcanized india rubber. Among the articles he had noticed something which had puzzled him ever since. He very much regretted that I was not present at the time of his visit.

"Here I interrupted him to say that I very much regretted it myself and that if he had sent me an intimation of his purpose I should have been certain to attend.

"'Well,' he answered, 'in one corner I saw, stacked as one sees them in an artillery yard, a pile of vulcanized india-rubber cannon balls. There was nobody there to answer the inquiries which I desired to make. Perhaps you can explain the matter to me.'

"I had not even seen the balls in question and had to say so.

"'I cannot imagine,' resumed his majesty, 'how any preparation of india rubber can be used for projectiles. It has often occurred to me that, in combination with other materials, it might be made useful for defensive purposes.'

"I was compelled to admit that it was equally mysterious to me how the inventor could have thought seriously of making cannon balls of it. After so unsatisfactory an interview the Emperor probably did not think that it would be civil to leave me immediately, so he asked me if I took much interest in military matters. I answered that I did not any more than civilians usually do.

"I was at that time residing very near the Palace of Industry. The next morning I went over before breakfast for the purpose of getting information upon the subject which had so puzzled the Emperor. I went directly to the india-rubber exhibit and sure enough, I found the balls there just as they had been described to me. It was too early for me to expect to see the man in charge, but there was a person in his place. I asked what in the world he expected to do with india rubber cannon balls.

"'They are not cannon balls,' he answered; 'they are foot-balls!'"

But after all the Emperor was not so far out of the way, because the experiences of the last few years in our great cultural sport shows that the football is quite as much an instrument of carnage as the cannon ball.

AKTIEN-GESELLSCHAFT METZELER & CO., MUNICH.

Metzeler & Co., of Munich, in their annual statement, in place of the profit equaling $138,885, made in 1910, report a loss for 1911 equal to $185,000. Of this amount 85 per cent. is covered by the reserve fund of the company. The loss is chiefly ascribed to the large stocks of raw material held, and to the reductions in prices of manufactured products. It is stated that orders representing $1,000,000 have, however, been booked for this year.

ADVANCE IN PRICES OF GERMAN RUBBER STAMPS.

The Association of German Stamp Manufacturers has made an advance of 10 per cent. in the prices of rubber and other stamps. As stamp makers are under the provisions of the German Book Printers' wage scale, they consequently benefit by the 10 per cent. increase, which went into effect with the printers on January 1, 1912.

WHAT CONSTITUTES AN EXPLOSION?

Owing to certain differences in expert opinions as to what really constitutes an explosion, the Association of German Engineers has recently come to an understanding on that point with the German fire insurance companies. An explosion is defined to be "a sudden expression of force, resulting from the expansive effort of gases and vapors, it being indifferent whether the gases or vapors were present before the explosion, or were only formed in the course of the same." Under the term "explosions" are included those arising from explosives, from mixtures of gases, dust, evaporation of fluids and the expanding force of gases and vapors. Disturbances caused by the centrifugal force of rotating bodies or the tension of materials are excluded.

LIGA GUMMIWERKE, HEINRICH PETER & CO., FRANKFURT a. M.

Further particulars received from the new Liga Rubber Works rectify and supplement the provisional details quoted in the October, 1911, issue of THE INDIA RUBBER WORLD.

The company is under the management of Mr. Theodor Heiges and Mr. Heinrich Peter, the former, who was previously managing director of the Louis Peter Co., having assumed the commercial management of the Liga company; while the latter, who had been for ten years works manager of the Louis Peter Co., has undertaken the management of the new works. Mr. Louis Peter, Jr., and Mr. Frederich Peter (both previously connected with the Louis Peter Co.) are likewise interested in the new company, the specialties of which are cycle and commercial motor tires, heel pads and rickshaw pneumatics. Capital has been increased from $37,500 to $90,000.

TAMPING PAVING BLOCKS BY AIR.

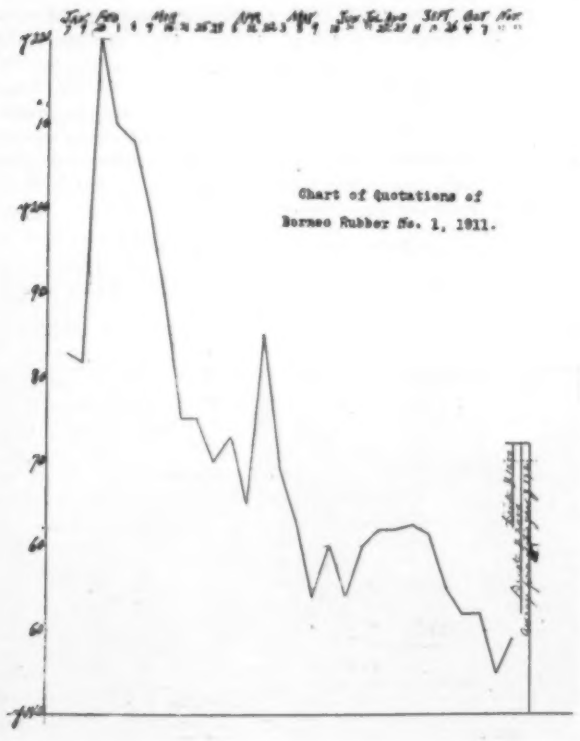
A German inventor has devised an apparatus for tamping paving blocks with compressed air. The compressed air is supplied by a portable plant shown in the illustration reproduced from "Popular Mechanics." A number of leads of hose and tampers may be used simultaneously. The tamper has a rod running through its centre, which rests upon the block, and which is worked up and down by the pneumatic mechanism.

PNEUMATIC TAMPER FOR PAVING BLOCKS.

RUBBER MATTERS IN JAPAN.

TO THE EDITOR OF THE INDIA RUBBER WORLD: When I last wrote to you in July, I did not expect that such a long period would elapse before my next letter to you. This brings to mind the truth of the proverb that "Time and Tide Wait for No Man." The only excuse I can offer—and that a rather flimsy one—is that there has been a dearth of news in the rubber business, and I therefore had very little occasion to write to you in this connection.

Since last July, the market prices of Upriver hard fine Pará have fluctuated between $1.15 and $1.30 gold per lb., not a very wide range of fluctuation, the minimum figure being still higher than the quotations given in June, at which some active business was transacted. The revision of the import tariff, with the heavier duty it imposes on nearly all lines of manufacture, should have stimulated the import of raw materials, but, although seven months have elapsed since it came into effect, we do not yet observe any remarkable change in the volume of imports, particularly in our line of business. This may be partly due to the financial problems involved in the earlier fluctuations of rubber, but the inactivity is also doubtless due to the industry still being in its infancy. Although it may appear trivial, however, in comparison with the vast extent of the rubber industry, not only in your country, but on the continent of Europe and in Great Britain, the rubber industry in Japan does show considerable progress. As statistics show, ten years ago the total volume of our rubber imports, including india-rubber, gutta-percha and rubber sheets, etc., did not exceed $75,000 gold yearly. Today



this total has been swelled to $1,000,000 gold, which figure does not include rubber manufactures, such as tubes, rods, etc.

Expansion has not been gradual throughout the ten years, however; the most rapid progress has been witnessed since the Russo-Japan war. Our manufactures, however, are not sufficient yet to supply the domestic demand, still less do they enable us to engage in the export business.

As you will have learned from the newspapers on your side, affairs in China are in an extremely unsettled state, and of course this commotion has had a very deterrent influence on the trade between China and Japan. As the total of our exports of rubber goods to that country have not exceeded $50,000 gold per annum, and the parcels have been of such a small volume as to be delivered principally by parcels post, the rubber industry has not been affected to any extent by the revolution. We trust that when matters are put on a more satisfactory basis, China may be a customer for our industry, and that the industry may improve, so that we may cater satisfactorily to the trade. We solicit your kind assistance, both directly and indirectly, to this end.

For your information, I now have the pleasure to enclose chart of the quotations of Borneo rubber for this year. The prices are based upon deliveries ex. wharf, Yokohama, in piculs of 133 pounds. Our Yen corresponds to 50.35 cents of your money.

KENZO OKADA.

Tokyo, Japan.

INCREASED PRODUCTION OF TALC AND SOAPSTONE.

A REPORT of the Government Geological Survey shows that there was a considerable increase in the production of talc and soapstone in this country in 1910, the production for that year being 150,716 tons, an increase of 16 per cent. in quantity and of 30 per cent. in value over 1909. This increased production came chiefly from New York, with some assistance from Vermont, Pennsylvania and Georgia.

According to this report "New York increased 48 per cent. in quantity of output and much more in relative value. Georgia trebled its production. Vermont gained 10 per cent. in production and 14 per cent. in value. In Massachusetts, although the quantity reported sold was somewhat less than in 1909, the actual production increased about 16 per cent. in quantity and 7 per cent. in value. There was a decline in the production sold in all the other states with the exception of Rhode Island, but in New Jersey the decline was scarcely appreciable. In Virginia, which is the great soapstone state, the decline in quantity and value was only about 2 per cent.; in North Carolina it was 35 per cent., and in Maryland and California it was about 50 per cent.

"The variation in the production of the different states is in part at least due to variations in the immediately available deposits, but in general it may be said that the deposits are extensive and show no signs of depletion.

"In the best grades of talc the United States is deficient. They are imported chiefly from France and Italy.

"In 1910 nearly 11 per cent. of the material was sold as crude from the mine, about 7 per cent. as sawed into slabs, 15 per cent. as manufactured, and 67 per cent. as ground. The sale of rough talc and also of manufactured articles declined during the year, while the sale of slabs and of ground talc advanced greatly.

"The productive talc and soapstone belt of the United States is limited almost exclusively to the Atlantic States from New York and Vermont to Georgia. Outside of this belt there is only a small production in California."

SHINGLES OF ASBESTOS.

The industry of making shingles out of asbestos is said to be assuming considerable proportions in this country. This seems to be a logical development, as the asbestos shingle is not only light in weight, but fireproof—a tremendous advantage over the wooden shingle—and also weatherproof, so that it will last indefinitely.

Japanese Rubber Planting in Malay Peninsula.

By Our Regular Correspondent.

WHILE the development of Malayan rubber plantations has been largely effected by British capital, a certain share of that result is due to the operations of Japanese investors, who were encouraged by the exceedingly profitable character of the business in 1910, to plant Pará trees in the Malay Peninsula. By August, 1911, these planters, 77 in number, had acquired, it is estimated, about 83,700 acres, of which about 15,800 had been planted, the aggregate investments representing about $640,000.

Of these 77 plantations, about 57 are being operated as an additional occupation by Japanese dwellers at Singapore and other cities in the Federated Malay States. While it is claimed that these plantations have prospects of becoming more profitable than those owned by Europeans and Americans, about three-fourths of the planters are short of the funds necessary for their cultivation.

Owing to the disinclination on their part, by reason of differences in language and customs, to have dealings with the European and Chinese banks (with the plantation lands as security), and also from the wish to avoid the high interest charged by Indian usurers, the Japanese dwellers in the Peninsula established the system of "Lottery Associations" ("Mujinko," as called in Japanese), as an organ of monetary circulation for rubber plantations.

The rudimentary and very imperfect constitution of the lottery association is as follows: "The duration of the association is usually fixed at 25 months, the membership numbering 25, each member paying a regular monthly contribution of $60; or in some cases $20 to $30. All the money thus contributed can be borrowed for the purpose of his rubber plantation, by the member to whom it is adjudicated as a result of bidding. He has to give two or three sureties, paying the stipulated rate of interest as well as all the expenses of the monthly meeting. Any borrower under this system cannot bid again nor borrow any more from the lottery association, but must continue his monthly contributions and pay the interest on the amount borrowed; the number of bidders thus decreases each month; the rate of interest, as fixed by the monthly bids equaling 18 to 36 per cent. per annum. The first money contributed, however, can be borrowed only by a member who is a standing manager and one of the founders."

Now, there are thirty such associations among the Japanese planters in the Malay Peninsula. Some planters contribute to all of them; a larger number contribute to over half of them.

If the planters each contribute $30 monthly to thirty lottery associations (each with 25 members or partners), the total advance to planters for rubber plantations would be $22,500 per month. In addition to the help these associations give planters in need of funds, they serve the purpose of savings banks for their contributories.

JAPANESE INDIA-RUBBER IMPORTS.

		1909		1910		1911	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
India-rubber and gutta percha:—							
Crude	(a)	1,321,463 pounds	$729,715	1,580,918 pounds	$1,515,093	2,054,864 pounds	$1,530,008
Plates and sheets (soft and hard)		60,268 pounds	$49,538	98,308 pounds	$79,769	116,128 pounds	$101,620
Tubes and rods (soft and hard)		43,958	63,605	46,784	46,580	83,952	69,861
Other classes		31,329	32,323	134,951	49,346	563,920	148,767
	(b)	135,555 pounds	$145,466	280,043 pounds	$175,695	764,000 pounds	$320,248
Engine packings		569,841 pounds	$113,765	834,602 pounds	$170,608	749,786 pounds	$174.596
Hose and machine beltings		91,566	28,619	90,047	29,504	144,733	55,254
	(c)	661,407 pounds	$142,384	924,649 pounds	$200,112	894,519 pounds	$229,850
Submarine and underground cables		2,704,045 pounds	$178,591	9,667,184 pounds	$794,272	3,383,440 pounds	$188,456
All other insulated wire		5,933,081	755,474	7,137,327	815,416	19,735,170	1,849,810
	(d)	8,637,126 pounds	$934,065	16,804,511 pounds	$1,609,688	23,118,610 pounds	$2,038,266
Rubber boots		8,975 pairs	$10,768	3,090 pairs	$5,802	8,597 pairs	$18,114
Rubber shoes		24,337 pairs	12,332	16,625 pairs	7,351	40,273 pairs	19,851
Elastic boot webbings		18,571 sq. yds.	35,922	21,403 sq. yds.	47,122	32,035 sq. yds.	71,283
Waterproof cloth		280,120 sq. yds.	86,278	297,329 sq. yds.	91,914	47,181 sq. yds.	25,675
Elastic bands and cords		.....	21,174	.....	13,453	.....	22,895
Air pillows		23,330	13,085	28,397	16,321	24,204	13,986
Quilts and cushions		.....	9,519	.....	9,465	.....	7,242
Manufactures of india-rubber and gutta percha		.....	135,191	.....	141,503	.....	171,660
	(e)		$324,269		$332,931		$350,676

SUMMARY OF VALUES.

		1909.		1910.		1911.	
Crude	(a)	.....	$729.715	.....	$1,515,093	.....	$1,530,008
Manufactures	(b)	$145,466		$175,695		$320,248	
	(c)	142,384		200,112		229,850	
	(d)	934,065		1,609,688		2,038,266	
	(e)	324,269		332,931		350,676	
			$1,546,184		$2,318,426		$2,939,040

As crude rubber is free under both measures, the growth of imports from 1,321,463 pounds in 1909 to 1,580,918 pounds in 1910, and 2,054,864 pounds in 1911, reflects the progress of the Japanese rubber manufacturing industry.

ENGLISH RUBBER-PLANTING COMPANIES.

A COMPARISON of the details given by the recently issued "Rubber Share Handbook" for 1912, with those of the previous annual volume, shows that there has been a net increase of 8 per cent. in the total number of rubber-planting companies with English offices, and presumably operating with English capital. The total in 1911 was 522, of which 30 do not reappear in the present volume, while the addition of 69 new names brings up the net aggregate to 561; or, including trust and investment companies, 589 companies.

The Malay States take the lead, Ceylon holding second place, as indicated by the following table:

	March, 1911.	February, 1912.
Malay States, etc.	200	225
Ceylon	95	104
Java	44	43
Sumatra	35	39
Borneo	28	28
India	22	29
Oceania, etc.	4	4
Total Asia, etc.	428	472
Africa	50	52
South and Central America and Mexico	44	37
Total	522	561
Trust and investment companies	23	28
Total	545	589

This increase in the number of companies would not by itself be more than a normal development, but the largely developed output of individual companies is reflected in the augmented figures of 1911 as compared with 1910, shown by lately published reports There is, moreover, a further division of Rupee and Dollar companies, which have their offices in the East and are presumably working with oversea capital. These 140 companies handle an appreciable share of the Asiatic rubber production, in addition to that financed by the 472 English companies with Eastern interests. As 38 of the 140 are in the Malay States, 97 in Ceylon, and 5 in India, the aggregate interests of all the companies would be thus located:

Malay States	263
Ceylon	201
Java	43
Sumatra	39
Borneo	28
India	34
Oceania	4
Total Asia, etc.	612
Africa	52
South and Central America and Mexico	37
Total	701
Trust and investment companies	28
Grand total of companies	729

The relatively smaller extent to which English capital is represented in Africa, South America, and other parts of the world than in the East, is explained by the fact that other countries have important financial interests in the former directions. In the development of British enterprise in the East, the attractions to capital presented by the corporate form of business, have been clearly demonstrated.

One fact is shown by a comparison of the 1911 and 1912 handbooks; that while 28 companies with plantations in the Federated Malay States have been added to the list, only three have dropped out, the net increase being 25 companies, equalling one-eighth of the 1911 number. For Ceylon, there are 10 additions and only one withdrawal, making a net gain of 9 companies. Inasmuch as the additions doubtless represent the accession of fresh capitalists, as well as the introduction of additional capital by previous investors, the position of the Eastern rubber industry, from the standpoint of results, is evidently giving satisfaction to the interests involved.

RUBBER GROWERS' ASSOCIATION.

THE interim general meeting of the Rubber Growers' Association, held at offices of that body in London on February 12, was of interest as being the first assemblage under the new plan of holding the annual meeting in February, instead of during the holiday season later in the year. Mr. R. K. Magor, the president, was in the chair.

Dealing with only six months, the number of matters touched on in the report is necessarily limited, while they are of intrinsic importance. One of these is the question of scientific research. In Ceylon, there are two schemes being considered, which it is proposed to consolidate; thus strengthening resources and ensuring better progress. With respect to the work of the Malaya Research Fund, steps have been taken to increase the available funds, by inviting additional guarantees from companies, which have now reached the producing stage. While answers have not in all cases been received, there is every prospect of larger funds being shortly available. This would permit of the engagement of an expert in physiological botany and mycology, whose advice should be of considerable assistance to managers of estates in connection with tapping, as well as in dealing with pests and diseases.

Confining the scientific reports to the relatively small number of members who were guarantors, the chairman personally considered an unsatisfactory state of affairs. He expressed a preference for a system of general contribution by acreage, which would allow of the whole industry benefiting from the results of investigations undertaken at the common expense. In this connection, he referred to the example of the Indian Tea Association, the scientific department of which has a staff of four scientific officers, with fully equipped laboratories; their establishment having quite recently been further strengthened by the appointment of a mycologist. The necessary expenses are met to a great extent out of the funds of the association, obtained through a "per acre" subscription from its members, which had recently been increased for the special purpose of scientific research.

In addition to these subscriptions, the government of India and the governments of Bengal and Assam subscribe handsomely to the fund. In concluding his remarks on this subject the chairman suggested that the government of the Federated Malay States, which derives such large sums from rubber, should support the scheme financially. But, as he added: "Before we can ask governments to do this, we must first show that we are able to help ourselves by working together for the common good, as the tea industry has so successfully done in the way of scientific research." The importance of the object lesson thus afforded by tea was further urged by a reference to the fact that most of the planters now interested in rubber had gained their experience of planting in the tea industry.

Mr. Arthur Lampard, while advocating the proposed consolidation of efforts in Ceylon, referred to the possibility of the association and the Imperial Institute co-operating in the direction of scientific rubber research.

The important subject of estate sanitation has been the subject of communication by a sub-committee of the council with Dr.

Malcolm Watson, who is drawing up a series of recommendations in the form of a few simple rules, to be distributed among estate managers for their guidance.

STANDARDIZATION OF RUBBER.

The chairman briefly referred to the desirability of standardization of manufacture of rubber from plantations in the Middle East, adding that the trade does not desire endless varieties of manufacture, but uniformity and standardization. In seconding the motion for the adoption of the report, Mr. Arthur Lampard further urged the importance of standardization, adding: "It is absolutely a genuine and necessary part of the rubber manufacturer's business to be in a position to cover his commitments forward. If we standardize rubber, as is already done in Fine Pará, we shall get rid of much of the difficulty of the manufacturers, and further popularize the use of plantation rubber."

THE NEW YORK RUBBER EXHIBITION.

In connection with the approaching exhibition the recommendation of the exhibitions sub-committee to the effect that the gold, silver and bronze medals of the association be offered on that occasion, was adopted. Mr. Noel Trotter, it is understood, will represent the association at the exhibition. In the absence of Mr. McEwan, Mr. Bethune addressed the meeting and explained the work which the sub-committee had done in the matter.

THE DEMERARA RUBBER CO., LIMITED.

The adjourned general meeting of the Demerara Rubber Co., Limited, was held in London on Thursday, March 7, at the Commercial Sales Rooms, Mincing Lane, E. C., with Mr. Isidore Clifford, chairman of the board, presiding.

Some time prior to this meeting the stockholders had appointed a Committee of Inspection to investigate the methods and condition of the company and to make a full report. This report had been sent to the stockholders and was followed a little later by a reply to it from the board of directors. It was expected that the meeting would be quite protracted and possibly not very tranquil, and these expectations were fully realized. The directors' point of view was ably presented by the president, and the opinion of the Committee of Inspection fully set forth by the chairman, Mr. R. W. Smith. There was a full and free debate, growing rather heated as the meeting advanced; but finally the motion to accept the report of the Committee of Inspection was put and carried by a large majority.

The differences between the directors and the stockholders have been referred to private arbitration; and it is the hope not only of those who have invested their money in this enterprise, but of all those who wish to see English ventures in English colonies successful, that the differences in this company may be happily adjusted, and the outlook for its future much improved.

ENGLISH RUBBER LIQUIDATIONS.

Commenting upon a cable to the effect that 32 English rubber companies had gone into liquidation last year, with a total authorized capital equalling $18,000,000, the "Times of Ceylon" remarks: "There are still companies in existence in London which can only go the same way. Standing by themselves they form a striking commentary on the situation which was created by the rubber boom. Practically all the total failures have been wild rubber ventures, but all the directors involved have not been wild rubber men, or only figure heads or company promoters. In two or three instances men experienced in Eastern plantations too readily permitted themselves to be drawn into the net. They relied upon reports which appeared all right on the surface, and the land not being situated in the East, and those who reported not being known to them, they were confiding enough to take other people's word that everything was as stated, with disastrous results. A proportion of the public will be discriminating enough to understand the difference between the many forest ventures of other parts of the world, and the settled pursuit with which we are so familiar in Ceylon and in the adjoining countries; and as *bona fide* plantation concerns will pay handsome dividends in the future as in the past, many victims will come to realize that it is not the rubber industry that was to blame, but the wild (-cat) industry."

NOTES FROM BRITISH GUIANA.

By Our Regular Correspondent.

THE DROUGHT—HOW IT HINDERS THE INDUSTRY.

THE topic of the moment here in balata, as well as in agricultural, circles is the continuance of the drought, which is still unbroken. The weather is remarkable and bodes no good for the balata industry, and prospects for the forthcoming season are gloomy. The drought has now continued for fully six months and the water supply even for the city of Georgetown is in such danger of running short that we have been put on "time run." The effect upon navigation to the distant timber grants can be very well imagined. The rivers are so low that expeditions have the greatest difficulty in reaching their destination. In some cases it has been found absolutely impossible, and while some men have remained stranded at Potaro mouth, others have returned to town. Expeditions which have safely reached the spot desired are in some respects in a worse position than those which have had to return, because it is not possible in this dry weather to do any bleeding and the men have to buy provisions at prices ruling on the grants, whereas those who have returned, while they are earning no money, are at least able to buy provisions at normal prices. The bleeding season will start late and may perhaps finish earlier. The output will be smaller, whilst in all probability the season will furnish a new crop of laborers' grievances. The men who are on the grants doing no work will contract a large indebtedness to their employers, which their earnings may or may not be sufficient to repay. The position is undoubtedly a most unfortunate one, coming as it does after a season of misfortunes.

The following extracts from the half yearly report of the East Demerara Water Supply Commissioners illustrate the severity of the drought: "The rainfall was reasonable during the month of July—12.22 inches—but from August 1 a most severe drought set in, and up to date still continues. During the five months, August to December, although the rain fell on 31 days, only on three occasions was it of any benefit to the conservancy, the rain that fell on the other 28 days having fallen in such small quantities as to be of little or no use.

THE EXPORT TAX ON BALATA—SHARP CONTROVERSY AROUND.

Much discussion has been aroused upon the subject of the export tax in view of the early approach of the annual session of the Legislature. At a recent meeting of the Balata Association it was resolved to appoint a committee to bring the matter before the government, after Mr. George Garnett had supplied the meeting with some interesting statistics. He said: "The tax of 2 cents per pound on balata was simply sprung on the Combined Court through Howell Jones. It was not properly considered and was allowed to pass because the government needed money. It was an exceedingly bad move as a matter of policy." In his opinion a tax on forest products should be somewhat similar to a tax on mineral products. By the 1910-1911 report of the Commissioner of Lands and Mines the gold exported was valued at $962,303.78. The royalties and licenses, etc., under the heading of "Mining" were $55,224.38, or equal to 5.7 per cent., but of this amount $10,000 was ear-marked by the government for the purpose of making roads for the benefit of the industry, so that the real ratio was 4.80 per cent. He could not

see in the commissioner's report any statement as to the valuation of balata, but in the Blue Book it was mentioned as $670,192.32. Of course, that was a very low valuation. On calculating the exports, 1,162,588 pounds, at one net price realizable at Georgetown, say, at 74 cents, the valuation would be $860,315.12. The royalty of two cents would be $23,251.76, and for licenses the figure would be $22,470.72, or a total of $47,722.48, or 5.55. The additional 2 cents export tax meant another $23,251. He could not get at the ratio of taxation in connection with timber properties as the Commissioner only mentioned timber exports. Timber exports, however, were $94,275.29, while royalty and licenses were $9,384. The timber sold locally was not mentioned, and as the figures included all wood cuttings there could be no comparison. He thought that with all those figures they were perfectly justified in approaching the government with a view of getting the 2 cents per pound export duty on balata withdrawn, and he thought that if they did not see their way clear to withdraw it, it should be utilized for the benefit of the industry. They were not being fairly treated. The result of the additional 2 cents tax, or $23,251, was to increase the ratio of taxation by nearly 4 per cent. and make it about 8.66 per cent. He did not think that was fair and certainly thought that the association should approach the government in the matter. Julius Conrad, a director of the British Guiana Balata Co., who is on a visit to the colony, said that the tax had caused some unrest. A committee was appointed, comprising J. B. Laing, manager of the British Guiana Bank, W. White (Consolidated Rubber and Balata Estates, Limited) and Henry Daley (Essequibo Rubber and Tobacco Estates, Limited) and as a result of its deliberations a strong petition asking for a reconsideration of the whole matter was submitted to the government.

This petition after enumerating many reasons for abolishing the export duty concluded as follows: "Your petitioners humbly pray that Your Excellency and the Honorable Court will abolish entirely the export tax placed on the balata industry last year, or failing this will order that the amount so realized will be utilized for purposes in connection with the industry. And your petitioners will as in duty bound ever pray."

In response, the Acting Governor, Hon. C. T. Cox, C.M.B., has sent the following minute to the government secretary: "When the Combined Court is in Committee of Ways and Means, I shall be glad if you will invite the committee to extend the export tax now levied on balata to rubber, timber and all produce of the colony, not necessarily in the same proportion as to value, but at a rate and in a manner which may be found most convenient." He then goes on at some length in the attempt to justify this suggestion.

This, however, does not remove the grievance, but appears to give consistency to the impost. That will not be done, however, until a general colonial export tax is imposed. It will be interesting to see whether the legislature will be swayed by notions of stout equity or expediency.

The newspapers are against the tax. The "Daily Argosy" said editorially: "There is no insidiousness or ambiguity about a direct tax. Nothing intervenes to distract attention from the weight of the burden it imposes. It drops heavily, and in the case of the balata tax it has struck where it has fallen. Whether the tax increases the cost of production, or amounts to a sheer abstraction from profits, the interests affected have been unable to pass it on to others. Hence the grievance and the petition for redress. The tax regarded at an *ad valorem* rate amounts to less than 2 per cent., which, compared to the rate levied on the necessaries of life, is infinitesimal. This circumstance, however, has no bearing on the equity of the tax. It does not make it less unfair, and good arguments can be adduced in favor of taxing, for revenue purposes, commodities that enter largely into consumption. It is safe to assert that in the absence of this impost there would be a greater likelihood of capital coming in for investment than there is today. On the other hand, capitalists would hardly be so unreasonable as to maintain that they should not contribute a fair share to the public revenues in exchange for the benefits they receive—first for those received from the use and occcupation of lands belonging to the Crown and not to them; and, secondly, for those that are supposed to accrue in a well-ordered community, which provides an appreciable amount of security of property, to say nothing of the ordinary conveniences of a civilized country."

The "Daily Chronicle" said: "The decision of the Balata Association to appoint a committee to protest against the export tax on balata in order that the matter may be brought before the forthcoming annual session of the Combined Court is an eminently wise one, and it is to be hoped that those members of the court who have had some experience in the industry will make their voices heard when the subject comes up for discussion."

CUTTING OF RUBBER TREES—A NOVEL PROSECUTION.

A somewhat novel prosecution was made recently at one of the country police courts when two East Indians of Plantation De Kinderen, a sugar estate, were charged with having had in their possession a quantity of rubber trees reasonably suspected to have been stolen. The men said that they did not know they were of any value, but an overseer of the estate said that one of the defendants knew very well, as he worked on the rubber cultivation on the estate. The magistrate told them that even in the forest people could not cut any trees as they liked, much less on cultivated land. They were fined $15 each or a month's imprisonment.

POSSIBILITIES OF *HEVEA* IN THE COLONY .

Mr. Daley recently returned from a visit to the Essequibo Rubber and Tobacco Estates property on Liberty Island, and said that the *Heveas* were doing exceedingly well. Great progress was also being made at the Hills Estate, the property of the Balata Estates, Limited. He advised anybody "who was interested in *Hevea* cultivation to take a trip up to the Hills Estate if he wishes to see what *Hevea Brasiliensis* can do in this colony under proper management."

ELECTRICITY AND RUBBER GROWING.

THE idea of supplementing natural influences in agriculture is not new, but has in the past engaged the attention of scientists. It is, moreover, only appropriate that initial agricultural operations should benefit from the progress of modern science and ingenuity, in the same manner as has been the case with the later operations connected with the harvesting and preparation of cereals.

Dr. Franz Müller, of Frankfurt, has, among others, long been working for the promotion of the electro-chemical culture of plants, his plans having recently been described by Mr. Emil Lowitz in a lecture at the Royal Botanical Gardens, London. He stated that by means of an electrical apparatus it is possible to invigorate trees and plants, to pump food into them in order to promote their growth, to introduce insecticide for the exterminating of parasites, and to treat the soil.

In an experiment with a small rubber tree, before treating it with insecticide, Dr. Müller pumped plain water into it, with the object of finding the effect produced. After a few days, on tapping it, he found the latex flowed from it more copiously than before. Moreover, the parasites were exterminated, their death furnishing nutritive matter to the plant.

Rubber planters have to contend with difficulties, in the removal of which this new method may prove of great importance. Poor soil, arising from a deficiency of the needful chemical properties, or from its strength having been exhausted by previous crops, is among the troubles Dr. Müller's plan is meant to obviate.

Some Notes on Rubber Planting.

TWO MONTHS' RESULTS OF PROMINENT MALAY RUBBER COMPANIES.

THOUGH only applying to a relatively limited number of companies, the following returns dealing with the first two months of 1911 and 1912 will be found of interest:

TOTAL CROP FOR JANUARY AND FEBRUARY.

	Acreage planted.	1911.	1912.
	Acres.	*Pounds.*	*Pounds.*
Anglo-Malay	3,521	115,910	133,292
Pataling	1,422	49,931	65,818
London Asiatic	4,283	46,343	83,921
Golden Hope	850	12,477	22,554
Selaba	1,846	23,039	45,875
Bikam	700	12,083	21,821
Aggregate	12,622	259,783	373,281

By this showing, 1912 seems to be starting favorably for the above prominent companies.

SCOTTISH MALAY RUBBER CO., LIMITED.

Out of the 2,440 acres owned by this company in Selangor, Federated Malay States, 1,403 have been gradually planted with rubber since 1905. That the earlier plantings are now reaching maturity is shown by the recent output of rubber:

	Pounds.
1910, Twelve months	31,002
1911, Twelve months	102,017
1911, January	5,237
1912, January	9,519
1911, February	10,126
1912, February	17,088

These figures seem to augur well for this year's prospects.

RIVERSIDE (SELANGOR) RUBBER CO., LIMITED.

The 1,455 acres under cultivation of this company's total holdings of 2,241 acres were planted to the extent of 437 in 1906-7, the latter area being at present more or less near the bearing stage. Tapping commenced about the end of 1910, the quantity harvested in February, 1911, being 5,700 pounds. The figure of 20,361 pounds recorded for February, 1912, shows that this concern is making progress.

UNITED SERDANG (SUMATRA) RUBBER PLANTATIONS, LIMITED.

Of the 11,282 acres owned by this company, 8,161 acres are planted; 60 per cent. of the latter acreage since 1906 and 1907. The quantity harvested during the year ending August 31, 1911, was 218,530 pounds, while that recorded for the six months ended February 29, 1912, was 212,972 pounds, the output having thus been almost doubled. The estimate of 433,000 pounds for the year ending August 31, 1912, seems likely to prove correct.

VALLAMBROSA RUBBER COMPANY, LIMITED.

The production of this company, owning 3,429 acres in Selangor, Federated Malay States, has not materially varied during the last three years. Figures published show:

	Pounds.
Twelve months to March 31, 1910	371,316
Twelve months to March 31, 1911	411,476
Eleven months to February 29, 1912	393,950

DR. HUBER IN THE EAST.

A small but distinguished party has been visiting the East, composed of Dr. Jacques Huber, the well-known rubber authority and director of the Goeldi Museum and Botanical Garden at Pará; Mr. C. E. Akers, representing British capitalists, with Mr. A. Ulenast and Mr. T. Lugones, both long connected with the Bolivian rubber industry. After visiting Ceylon, they continued their journey to Malaya and the Dutch East Indies, from which points they expect to return to Ceylon early in May. They have been looking rather into the commercial than the scientific aspect of the rubber industry.

DR. WILLIS' CHANGE FROM CEYLON TO BRAZIL.

In an editorial under the heading of "Ceylon's Loss, Brazil's Gain" the "Ceylon Observer" pays an appropriate tribute to the services rendered by Dr. J. C. Willis to the island as Director of the Royal Botanic Gardens and in other responsible positions. These services will now, as already noted, be rendered to the Republic of Brazil as Botanical Director, Agricultural Adviser and Planting Expert at the Rio de Janeiro Gardens.

In an interview before leaving Ceylon Dr. Willis said:

"As far as soil and climate are concerned, my general impression is that rubber in Ceylon does not do very well for the first six or seven years, but after that it does very much better. There is no doubt that the Malay States can beat us for six or seven, possibly ten, years, but I am quite convinced that, after ten years, Ceylon rubber grows as well as any."

"With the high price of rubber, naturally it pays to have the yield coming in when the trees are young, but I am pretty sure that after about ten years the trees will begin to catch up with those in the Malay States. How long they will take to catch up, of course, I cannot say."

THE FUTURE OF SUMATRA.

In European expert opinion Sumatra has a bright future, the best estates there being considered very good indeed. Sumatra has the advantage of better soil than in the average of the Straits possessions; the properties there being, moreover, generally well organized. Authorities believe that Sumatra will be heard from a good deal more as to rubber.

MALAYAN VS. CEYLON COOLY IMMIGRATION.

Malayan figures indicate that the superior attractions of the Federated Malay States have led to a larger immigration of coolies there than to Ceylon. Free passage is said to aid in the result attained, while in various points Malayan planters endeavor to improve the condition of their workers.

BORNEO GAINING BY RUBBER.

In his speech at the British North Borneo dinner, recently held in London, Sir J. West Ridgeway, the chairman, said that the shareholders of the company had been acting the part of empire makers and were now reaping the results.

"The charter," he added, "involves great responsibilities. The policy is one of vigorous development. The company has done its best and, thanks to rubber and the railway, we are now on velvet."

BRITISH ESTIMATE OF BRAZILIAN COSTS.

ACCORDING to a cable communication from London to the "Times of Ceylon," Mr. Jesser Davis, who went to Brazil to report on the estates of the Diamantino Rubber Plantations, Limited, is not impressed with the prospects, and stigmatizes the government subsidy as a mirage. He estimates that the cost of the rubber landed in London would be 2*s.* 5*d.* = (58 cents) per pound.

PHILIP FRANCIS RYAN.

Much regret has been expressed by the Indian press for the untimely death, through a bathing fatality, on December 31 last, of Mr. Philip F. Ryan, acting editor of the "Ceylon Observer." He had previously been assistant editor of the Calcutta "Englishman" and editor of the Madras "Times" and of the Lucknow "Daily Telegraph." His career gave promise of a bright future in his profession.

Rubber Hoof Pads for Horses.

WHETHER you call them hoof pads, horseshoe pads, rubber horseshoes, or any other name by which they are known to the trade, is immaterial; they all refer to a comparatively new product that has grown to be a highly important factor in general commerce and in the rubber trade in particular. The first pad put into practical use was known as the "Dempsey Pad," called after the name of its inventor, which appeared twenty-five years ago. It was what is known to the public today as a canvas back bar pad.

In 1891 Michael Hallanan, of New York, invented and patented a full sized hoof pad, the merits of which were so pronounced that it quickly gained a place for itself with horse owners and veterinarians. The same gentleman soon afterward brought out another pad, serving the same purpose, which was fortified with a firm and durable base of leather.

Of different styles and patterns, it might be said, there is almost no end, each manufacturer turning out all the way from twelve to twenty. It is safe to say, however, that there are not far from 100 distinct patterns of rubber hoof pads in the market.

It was only natural, when Mr. Hallanan's idea was seen to be a good one, that others should come into the field. Though its beginning was on a very small scale, this industry has advanced by rapid strides until it has reached great magnitude. The proportion of horses in New York City that are shod with rubber hoof pads is estimated at fifty per cent. Other cities show a smaller percentage; singularly enough Boston, with only 20 per cent. of its horses rubber shod, being at the foot of the list among large American cities.

Of twenty cab drivers on Broadway, New York, interviewed, all of them answered to the effect that their horses could not get along without pads. The New York fire department horses in the asphalt districts are padded, and of the 2,000 horses employed in the police service, those padded number 1,500. On the other hand, only a very small percentage of the 2,000 horses in the Street Cleaning Department are supplied with rubber pads—probably not over 2 per cent., but that number is increasing. The veterinarians of the above mentioned city departments were impressed with the necessity of the rubber pad. One of them said that he would have all the horses of his department padded if it were not for the fact that the pads were so high priced.

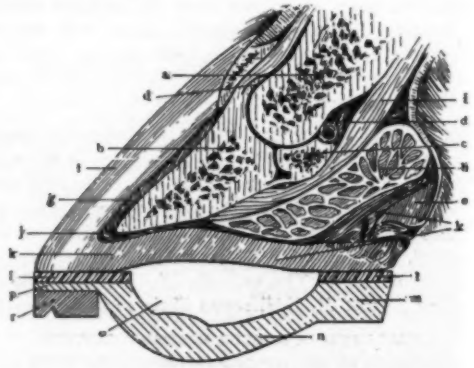
All horse hoof pads excepting the Air Cushion pad can be divided into two classes; the Full Front and the Bar pad The Air Cushion pad invented by W. J. Kent is in a class by itself.

In the Bar pad, a solid bar of rubber runs across the heel and is attached to a piece of leather which conforms to the shape of the horse's foot. The Full Front pad has the bar, and, in addition thereto, a rubber ridge running inside and filling the rim of the three-quarter shoe. The Air Cushion pad has a hollow cavity next to the foot, which forms a bulb on the ground, and thus takes all the pressure from the sole of the foot; while owing

to the amount of rubber used it has a non-slipping quality which no other pad has. It is made of very high class rubber, and has a leather back. Some cheaper pads, however, are made, having friction duck as a base. The Frog pad is practically out of use, not more than one pair being used to 5,000 of the other kinds, where three-quarter shoes are used in adjusting them to the foot.

The accompanying cut, which shows the cross section of a hoof and Air Cushion pad, gives not only an accurate idea of the anatomy of the horse's foot, but shows how admirably the Air Cushion pad does the work for which it is designed.

The purposes of the hoof pad are multifarious, the most important being to prevent injury to the horse as the result of the concussion that must necessarily ensue when the hoof strikes upon hard pavement. The Air Cushion pad absolutely prevents this, and while other pads may not entirely prevent it, they reduce it



Cross Section of Pad and Hoof.

a—Coronet bone.
b—Coffin bone.
c—Navicular bone.
d-d—Capsular ligament coffin bone.
e—Plantar cushion forming bulb of heel.
f—Front wall of hoof.
g—Sensitive laminae.
h—Plantar cushion.
i—Perforans tendon.
j—Sensitive sole.
k—Horny sole.
ka—Horny frog.
l-l—Leather sole.
m—Rubber cushion for heel and quarters.
n—Rubber elastic bulb.
o—Air space.
p—Rubber flange under shoe.
q—Space for entrance and expulsion of air.
r—Iron tip shoe.

to a minimum; and besides this, they are both a cure and preventive of corns, contraction of the hoof, quarter cracks, or sand cracks; prevent slipping, and make it next to impossible for a horse to pick up nails or stones, or cut his feet with glass. The rubber pad also enables a horse to stop and start quicker, gives him a stronger foothold, and gives the driver a firmer control.

It is these admirable qualities that so highly commend rubber hoof pads to horse owners, farriers and humanitarians. An idea of the extent of their popularity may be obtained from the fact that in 1911 between 600,000 and 1,000,000 pairs of hoof pads were used in the United States.

Naturally, the rubber hoof pads are best adapted for use upon

POWER'S SHOE.

WALPOLE.

the paved streets of cities, just as it is there that they are most needed, and it should be a matter of but a short time when practically all horses in the larger cities will be wearing them. They are made in all sizes to fit any standard make of iron horseshoes, no special iron shoes being required to be worn with the rubber attachment. The pads are sometimes backed with sole leather, sometimes with heavy canvas of special weave, and sometimes with a combination of the two.

As an invention the rubber hoof pad is classed as one of the most humane and beneficent of mechanical devices. It has the unqualified endorsement of such institutions as the American Society for the Prevention of Cruelty to Animals, the Veterinary

Medical Association of New York, the Veterinary College of the University of Pennsylvania, and many others.

None but the best grade of materials is used in the manufacture of these pads; in fact, to use inferior goods would be an aggravation and would defeat the purpose of the pad itself. In construction the rubber is affixed to the leather or canvas base with a strong, waterproof cement, and is then stitched through and through in order to preclude the possibility of blistering or pulling apart. The pads are a little larger than the horse's foot across the quarters, and form a part of the shoe. In shoeing, the farrier fits the foot and the pad with a three-quarter steel shoe of uniform thickness, using a little tar and oakum in the cleft of the frog to promote a healthy growth of the foot.

A set of well fitted and correctly adjusted pads will enable a horse to give better service, and make him last much longer on the hard and slippery asphalt and wood pavements than under the old methods, while on stone pavements his endurance is said to be increased by from three to five years.

Hoof pads are made in three weights, light, medium and heavy, and in as many sizes as there are sizes of horse's feet. In color they are black, white and red. They have been used successfully by owners and trainers of trotting and pacing horses. These require a light pad, and this want has been supplied with a pad that weighs but one, two or three ounces, according to the size of the horse's hoof.

Horse owners as a class are under the delusion that a horse shod on his front feet can overcome all difficulty from slipping, but this is not the case. There is just as much necessity for the

horse to be rubber shod on his hind feet to save the hind feet and quarters from the strain of slipping, and to give him greater propelling power. It might be added in closing that the automobile has practically wiped out the coach horse, and has played havoc of late with the coaching industry.

NEW TESTS FOR INSULATED WIRE.

The revised set of electrical regulations issued in 1911 by the Electrical Department of New York city are noticeably more severe than the old regulations. These new rules provide that the insulation shall be of rubber or other homogeneous compound which has been approved, and specifies a definite thickness for each size of wire. The elasticity of the insulating covering is tested as follows: The wire must be capable, after the removal of the braiding, of being wrapped several times around a cylinder of a given size without injury to the insulation, the size of the cylinder being such that while most new wires can probably stand the test, old wires, which when of inferior quality tend to grow hard and brittle, could hardly pass this test unless the insulation is of a very good quality. As a protection against too soft an insulation, the rules stipulate certain tests, among which is the following: The braiding is carefully removed from a portion of the sample (a short length of about 20 inches being used) and the copper wire is connected with one terminal of an electric circuit, of which a testing tool forms the other terminal. The portion of the sample from which the braiding has been removed is placed on a flat surface and the tool edge, which is placed across the sample, is pressed down on to the insulating cover with a pressure of 5 pounds, which is maintained for about a quarter of an hour. The electric current, which must be at least 100 volts alternating is then turned on and the tool edge must not sink far enough through the insulation to touch the copper wire and complete the electric circuit—a pretty hard test for a small wire but one to which the best manufacturers have agreed.

NEW TRADE PUBLICATIONS.

THE Boston Woven Hose and Rubber Co., Cambridge, Massachusetts, has just issued an exceedingly handsome series of three catalogues, one called the "Belt Book," the second, "Mats and Matting Book," and the third, "Fruit Jar-ring Book." Aside from the information, on the various topics treated, to be had in these three books, they are interesting as showing the development which the art of catalogue making has reached in this country. All three books are printed in black and green on tinted paper of superior quality. The "Belt Book," which contains 48 pages, gives a good many half-tone illustrations of the various belts manufactured by the company. The other two books, in addition to illustrations of the goods, contain many artistic designs that serve not only to give the books a fine decorative effect, but to show various ways in which the goods may be used. In the jar-ring book, for instance, the background on many pages consists of a subdued reproduction in delicate tints of the various fruits, in the preservation of which rings are used, as, for instance, grape vines with large clusters of luscious grapes, berry bushes bending with fruit, and orange trees laden with oranges. They are three very creditable productions.

The Springfield Rubber Co., Springfield, Massachusetts, has issued its 1912 catalogue. It contains 48 pages of text and half-tone illustrations, printed on a fine quality of paper, with a cover of plain, but pleasing, decorative effect.

The B. F. Goodrich Co., Akron, Ohio, is sending out four little six-page folders, descriptive of some of its products. One describes the Goodrich telephone receiver cushion. This is a disc of soft, pliable rubber which fits any standard telephone receiver. It conforms closely to the ear, and excludes other sounds —a very convenient device in a noisy office.

A second folder, entitled, "You Can Hear So Distinctly," calls further attention to the desirability of this telephone cushion. It has two illustrations—one of a man trying to hear over the telephone with the noises in the street evidently rendering it impossible; while the other picture shows the same man after he has secured the Goodrich cushion listening at the telephone with obvious satisfaction.

The third folder describes the Goodrich motorcycle tires, and shows the advantage of using a large-size tire on a motorcycle, if the rider wants comfort and long wear. The fourth folder describes the Goodrich valve discs, which are made of a new rubber composition, designed to overcome the objections that have heretofore limited the use of composition discs.

A booklet illustrating the important features of its Quick-Detachable Demountable Rim has just been issued by the Firestone Tire and Rubber Co., Akron, Ohio. This booklet calls particular attention to the fact that the base of the Firestone rim is unbroken, either across the rim or around it. Also to the fact that inner tubes can be changed when the rim is either on or off the wheel.

The Peerless Rubber Manufacturing Co.'s catalog No. 100 is a fine example of rubber catalog making at its best. It is a handsome volume of over 200 pages, printed in red and black, on a superior quality of paper, with a stiff leatherette cover, printed in red on black. It describes minutely and illustrates generously a great varicty of the products of this company. At the beginning of the catalog is a table of contents that makes it possible to refer immediately to any desired page. Fifty-five pages are devoted to packing and gaskets, and a great many kinds of packing, including the company's famous "Rainbow," are shown in these pages; 30 pages are given to belting; 46 to hose, and 24 to matting and rubber tiling, in which are included 7 pages consisting of full-page cuts, very handsomely printed in colors, showing interiors of churches, cafes, banks and private residences. These pages are extremely effective. There are other full-page cuts at the beginning of the book showing the interior of various departments of the factory that are also interesting, while the first illustration in the catalog, being a double-page view in colors of the Peerless plant at New Durham, New Jersey, gives an excellent idea of the size of this institution.

The United States Rubber Co. has just issued a handsome little volume of 64 pages, size 7 x 9, entitled "Advertising Service," displaying a great number of cuts, which the company is prepared to furnish the jobber for his own use or for the use of his customers. This catalog shows a complete line of rubber boots and shoes in the form of large-sized handsome half-tones, made direct from the goods. The boot cuts are about 4 inches high, and the shoe cuts over 3 inches long, a size that makes it possible to bring out all the details. In addition to the regular line of footwear there are several pages devoted to tennis and other sporting shoes, and to "Combination" boots. There are further pages showing the trade marks controlled by the company.

There are eleven fine cuts of various factories whose product is sold by the United States Rubber Co., and then follow a number of pages of half tone and line cuts for general magazine and newspaper advertising. An interesting feature and one entirely new for this company's advertising, is the illustration of various colored slides, to be used in moving-picture theaters, which the company is prepared to furnish to dealers who are interested in this very effective line of work.

The Banigan Rubber Co., Baltimore, Maryland, has sent out its 1912 illustrated catalog, illustrating and describing a complete line of Banigan goods, and giving net prices to retailers.

The March number of the Beacon Falls publication, entitled "R-U-B-B-E-R," is, as usual, full of entertaining reading and rubber information. As a frontispiece it has an illustration taken from "Life," showing a small boy who has broken through the ice—his head barely showing above the water—and his sister on the bank upbraiding him as follows: "Now see what you get for coming out without your rubbers."

The Whitall Tatum Co., New York, price list for 1912 is a revelation of the vast variety of sundries made of rubber for use in the sick room. The entire catalogue contains 206 pages. The first 72 are devoted to glassware; of the remaining 134 fully half are filled in describing and illustrating rubber goods, including not only those usually found in the drug store, but others that are used in the hospital and operating room, and rarely seen in the ordinary drug store collection. There is every kind of soft rubber articles, such as water and ice bags, syringes, atomizers, douche apparatus, cushions; besides combs, brushes and other hard rubber goods.

"Grenier's Rubber Annual for 1911," a quarto publication of 50 pages, has just been received from the publishers. Charles Grenier & Sons, Kuala Lumpur, Federated Malay States. That the Middle East is not only able to grow rubber, but can tell its story in attractive form is demonstrated by the second issue of Grenier's Rubber Annual, which in the character of both text and illustrations shows a notable advance on that of 1910. Considerable interest attaches to the views which bring the reader into close touch with the conditions under which rubber is cultivated and prepared for shipment.

While the papers dealing with past and present features of the rubber industry (such as that by Mr. H. Hamel Smith on "Labor at Home and in the Tropics") are of much value as illustrating the history of rubber cultivation, those by Mr. S. M. Gluckstern and Mr. A. E. Clabburn Detrez deal with the future from various standpoints, and are therefore of assistance in considering the crucial question of the prospect of the market. The annual is evidently the result of much thought and effort on the part of its authors and compilers.

The Editor's Book Table.

BUSINESS. (BEING VOLUME 4 OF A SERIES OF 10 BOOKS Known as the Young Folks Library-Vocations.) Edited by Andrew Carnegie, LL.D. Boston: Hall & Locke Co. 1911. [Cloth. 8vo. Pp. 401.]

THIS book is intended for young people, particularly for boys who are approaching the great question of deciding their future career. It contains about 15 short articles on business principles in general, written either by living authorities, such, for instance, as Andrew Carnegie, or taken from the writings of such past worthies as Horace Greeley and T. T. Munger. In addition there are about 15 articles descriptive of great industries, written in every case by a recognized authority in that particular industry. The story of the rubber industry is contributed by Henry C. Pearson. This contribution is interesting as an illustration of the fact that much valuable information may be imparted to the youthful mind in such a way that it will be absorbed with avidity and retained permanently.

This rubber contribution is in the form of a story—and a most entertaining story—in two short chapters. The first chapter opens at the *seringal*, or rubber camp, in the Brazilian forests. A jaguar has pursued one of the men almost to the camp; and the story begins with the exciting incident of bringing the beast to book. A great deal of crude rubber information is given in the conversation which these *seringueiros* hold at night while resting from their labors. The picture of rubber gathering—collecting the latex and smoking it over the palm-nut fires—with the dense jungle as a background, is one that is not likely to fade from a boy's memory for many a year.

The second chapter is laid in a rubber factory in the United States. The description of the manufacture of rubber is also put into narrative form. A sixteen-year-old boy expresses his disinclination for further school, and his father puts him in a rubber mill. There by his quick-wittedness he saves the life of a fellow workman who has been caught in the gearing and is rapidly being drawn towards the massive cylinders of a grinding machine. This incident calls the attention of the president of the company to the young man, and he is sufficiently interested in him to explain the different channels in the organization of the mill through which he can rise to a position of importance. This sort of information is exactly what the book is published to convey, and in this particular instance it is conveyed in such a manner that a boy, started on this story, would not drop it, even to go to a ball game.

MISSOURI BOTANICAL GARDEN TWENTY-SECOND ANNUAL Report. St. Louis, Missouri. The Board of Trustees. [Cloth. 8vo. Pp. 103.]

That botanical research has attained a high grade of development in Missouri is demonstrated by the Twenty-second Annual Report, dealing with the year 1911 of the Missouri Botanical Garden and the School of Botany connected therewith. In his detailed report the director records a number of interesting facts illustrating the work done, while valuable papers are contributed by prominent botanists on "Illustrated Studies of the Genus *Opuntia*," "The Agaves of Lower California," "Crataegus in Missouri," and other subjects.

While not dealing specially with rubber cultivation, this volume with its numerous artistic illustrations, presents many features of interest to rubber scientists.

Since the issue of this report it has acquired further interest from the resignation on February 19 of Dr. William Trelease, one of the best-known botanists of America, who was director during more than twenty-two years. It is gratifying, however, to note that Dr. Trelease's withdrawal is not due to any diminished enthusiasm for botanical work, but from a wish to pursue his scientific researches at the gardens without interruption from administrative duties. The Missouri Botanical Gardens are said to be exceeded in size only by the Kew Gardens, near London.

INDIA-RUBBER JOURNAL DIARY AND YEAR BOOK, 1912. Maclaren & Sons, Limited, London, England. [Cloth. 4to. 103 pp. besides 122 pages of diary.]

To the busy man, desirous of keeping his memoranda of past and future transactions in compact and accessible form, this well-arranged diary, interleaved with blotting paper, offers a convenient method of attaining that result. At the same time its introductory text is full of useful information of a statistical and business character, with special reference to British rubber imports and exports.

WHITE'S MANUAL FOR NEW YORK BUSINESS CORPORATIONS. By Hon. Frank White. New York: Lawyers' Co-operative Publishing Co. [Buckram. 8vo. Pp. 470. Price, $2.50.]

To the many business men interested in corporations (and thereby in corporation law) the recently published eighth edition of the above standard compendium will prove a valuable guide as to New York legislation. While prior to 1901 less than 1,900 new companies were annually incorporated within that State, the number has now (under the more liberal laws in force since that time), increased to more than 8,000 a year. The popularity of New York incorporation renders it doubly advantageous to have at hand a manual such as the above, embodying what the business man needs to know of New York corporation law and its various applications.

RUBBER SHARE HAND-BOOK. LONDON: THE FINANCIER AND Bullionist, Ltd. 1912. [Cloth. 8vo. Pp. 884. Price, 2*s.* 6*d.* net.]

Appearing a month earlier than last year, this valuable hand-book has increased in size from 636 to 884 pages; this expansion being principally due to the addition of details as to 140 "Rupee and Dollar" companies, which form a new and valuable feature of the work. The recent visit to the East of Mr. E. L. Killick, has proved of material benefit to the completeness of the hand-book. Another interesting feature consists of a number of full-page illustrations of rubber gathering and kindred subjects. The compilers of the work are to be congratulated on its completness.

WHY TIRE MAKERS SEND OUT GOOD ADVICE.

SOME people have wondered why manufacturers of tires are so industrious in sending their consumers instructions for the proper use and preservation of tires, the opinion being expressed that the quicker the tires wear out, the more business the manufacturers will have, and consequently, it is not to their interest to have tires last too long. But a second thought would prove to anyone that while the manufacturer might be quite willing that other tires should wear out rapidly, he would naturally want his own to make a great record for service, so that when automobilists are discussing tires, the users of his brand will sing their praises for service and endurance.

This distribution of advice on tire use is the best sort of advertising, and it is natural that if one manufacturer begins to instruct his customers as to the best way of getting service, other manufacturers will not care to be left behind. As a matter of fact, they probably all gain by instructing the consumer as to the proper use of his tire, for the more service the consumer gets out of his tire (and this is equally true of his car) and the less expense it is to him to own and operate a car, the greater will be the number of people who will join the automobile ranks.

Obituary Record.

A PERSONAL ESTIMATE OF HENRY C. MORSE.

MR. MORSE was almost the last of a brilliant coterie of typical New England business men, whose interests centered about the rubber trade. Although competitors oftentimes, they knew each other intimately, lunched together at the Trade Club, attended meetings of "Rubber Manufacturers Mutual," were cordial supporters of the Rubber Club, and addressed each other by their first names in the most democratic and intimate fashion. They knew each other's strength and weakness to the last detail. They fought out points of business ethics with the give and take of strangers. Then in time of stress turned to and helped each other with money, advice and influence. With it all a strong current of loyalty to each other, and a desire for the good of the trade at large, were ever present.

Of this circle not the least interesting personality was Henry C. Morse. He was a small man physically, compactly built, alert, always genial, and at his best surcharged with vitality. Perhaps his most remarkable characteristic was that of being able to bear up under long-continued adversity and to present always a smiling face to friend, foe and circumstance. That he would not be ultimately successful, or that his policies would fail, did not seem to occur to him; and the history of the company of which he was for so many years the active head amply justified him in his faith. It was under his guidance, and while he was still at the helm, that it shook off its burden of indebtedness and became at once a great success and a monument to his ability. Perhaps it was the strain of those long years of constant and anxious endeavor that, once success was assured, dimmed the brilliant intellect, fettered the cool judgment and shadowed the keen memory.

The last years of his life, passed in the companionship of a devoted wife, with everything that wealth could afford, were by no means unhappy. Indeed, just the reverse was true. To the last he was friendly, contented and free from pain.

Those who knew him best, however, love to remember him as he sat in his Franklin street office, his desk clear of papers, no matter how great the press of business, fully in touch with every detail, and yet unhurried, with ample time for friendly jest, anecdote or business conference, and with it all ready and even eager to help any and all who came to him for advice or comfort.

A strong man was Henry C. Morse and a successful one. He jested over his own adversities, but those of others received his most serious and sympathetic attention. The memory of the man will long be preserved by those who knew him, and, in the silent watches, the kindly, friendly, helpful presence will often be recalled.

THOMAS MARTIN.

When the funeral of the late Thomas Martin was held, on the afternoon of March 10, in the Horace Memorial Free Baptist Church in Chelsea, Massachusetts, the great company of people who attended the services, filling the church and overflowing into the streets, showed by its diversified character the many-sided interests that filled Mr. Martin's life. There were members of Congress, mayors of cities, bankers, manufacturers, and hundreds of mill operatives.

Mr. Martin died, after an illness extending over seven or eight months, on the evening of March 7, at his home in Winchester, Massachusetts, whither he moved, from his former home in Chelsea, about five years ago. For forty years he had been closely identified with the business, civic, social and religious life of Chelsea.

He was born in Countesthorpe, Leicestershire, England, August 2, 1838. At the age of 12 he was apprenticed to a manufacturer of elastic fabric. He served an apprenticeship for seven years; and in 1865, at the age of 23, he was engaged by an American syndicate to come to this country and take charge of the only mill in the United States at that time making elastic fabrics, which was situated at Easthampton, Massachusetts. Three years later he went to Chelsea, and became superintendent of the mill of the Boston Fabric Co., now known as the Revere Rubber Co. He remained with that corporation nine years, and in 1874, being joined by his brother William T., who had just come from England, he opened an elastic fabric mill in Chelsea, under the name of T. Martin & Brother Manufacturing Co. The business extended until, at the time of Mr. Martin's death, the company had five mills in Chelsea and two in Lowell, employing, all told, 600 hands.

His manufacturing business, however, did not engross his entire attention. A quarter of a century ago, he founded the Provident Co-operative Bank in Chelsea and was president until his death. For seven years he was president of the First National Bank of Chelsea and a trustee of the Chelsea Savings Bank, vice-president of the Frost Hospital and a trustee of Bates College at Lewiston, Maine.

In politics he was a Republican, and was elected repeatedly to positions in the Chelsea Common Council, and the Board of Aldermen, and also served a term in the Legislature. He was keenly interested in the "No license" cause and contributed generously to it. He was exceedingly active in religious work. The Horace Memorial, now used as a place of worship by the Chelsea Free Baptists, was erected by Mr. Martin in memory of his eldest son, who died in his twenty-first year in 1885. Mr. Martin is survived by his widow, a son, Bertram T., of Chelsea, and two daughters, Mrs. Albert W. Fitz and Mrs. Ethel S. Brierley, both of London.

MRS. J. VAN DUSSEN REED.

Mrs. J. Van Dussen Reed died in Paris, France, on March 14, 1912.

Soon after the death of her husband, the late John Van Dussen Reed, who died in 1892, Mrs. Reed was elected to succeed Mr. Reed as president of the Eureka Fire Hose Co., and remained in that position as the nominal head of that company until 1906, the actual management of the business being vested in B. L. Stowe as vice-president, and George A. Wies, as treasurer.

Mrs. Reed (Mary L. Mitchill) was born in Union Square, New York, and was a daughter of the late Samuel L. Mitchill, who during his life was at the head of the Savannah Steamship Co. Mr. Mitchill died in 1873, leaving as his survivors a widow, son and three daughters, all of whom are now deceased, a sister's death having preceded Mrs. Reed's by but a few weeks. Two married daughters survive Mrs. Reed.

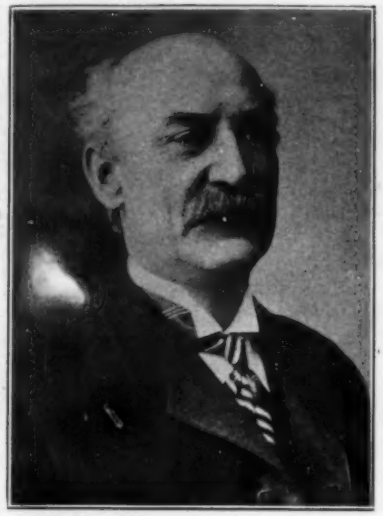
P. M. S. BRODIE.

News is received of the death of P. M. S. Brodie, manager of the works of the India Rubber, Gutta Percha and Telegraph Works Co., Limited, Silvertown, London, England, who had filled that position for over 11 years, having, however, for many years previous been connected with the company in minor positions. He started as assistant at the Sheffield branch, and by reason of his conscientious service worked his way rapidly up to the important office which he held at the time of his death. He was a man of fine business capacity and of a genial, attractive personality.

FREDERICK H. NAZRO.

Frederick H. Nazro, at one time the best known auctioneer in the shoe trade, died suddenly at Palm Beach, March 5, aged 66 years. Mr. Nazro was born in Boston, the son of a prosperous

merchant. He was educated in the public schools, and began his business life as entry clerk for J. H. Lester & Co., shoe auctioneers on Pearl street. Colonel Lester was the auctioneer of the concern, which held regular sales once a week. One day



Frederick H. Nazro.

when Lester could not speak aloud, an outside auctioneer was called in. Young Nazro claimed he could do better than the stranger, and Lester allowed him to officiate at one sale. He did so well that the Colonel never again autioneered goods in his own store. The firm became Lester, Johnson & Moody and on the death of Lester in 1875, it was changed to Johnson & Moody, with Mr. Nazro as partner. The specialty of the firm was boots and shoes, and for many years the excess stocks of rubber footwear manufacturers were consigned to them, and the annual rubber sale was an event in the trade. Mr. Nazro was the auctioneer at all these sales. He had a record of nearly 6,000 sales in three consecutive days, and in one day he made 2,200 sales in eleven hours. He knew personally every wholesale shoe buyer in the country and had an intimate acquaintance with the selling agents of the rubber shoe manufacturers. He retired from active business a few years ago.

Mr. Nazro was at one time president of the Boston Boot and Shoe Club. He was a past president of the Old School-Boys Association of Boston. He was a member of the South Congregational Church and a personal friend and co-worker with the late Rev. Edward Everett Hale, in his many philanthropies. He left a widow.

HENRY HARRIS FRANCIS.

Henry Harris Francis, formerly president of the Hartford Rubber Works Co., and later president of the Omo Manufacturing Co., of Middletown, Connecticut, died at his home in that city on Saturday, March 9, at the age of 64. He had been in poor health for the last four years, during which time he had taken but little part in active work. He was born in Wethersfield, Connecticut, October 12, 1847, son of Captain John H. Francis and Evelyne Harris Francis. At the age of 15 he entered the employ of Ezra Clark & Co., of Hartford, dealers in iron and steel, where he remained fifteen years. He left this firm to become secretary of the Union Knife Co., of Naugatuck, in which company he had bought an interest. Ten years later, in 1887, after the destruction of the plant of the Union Knife Co. by fire, he entered the employ of the Hartford Rubber Works Co. There he was quickly advanced to the offices of secretary and general manager, and after the death of John W. Gray, to the presidency of that company. Mr. Francis' management of the Hartford company was extremely successful and gave him a considerable reputation as a manufacturer.

In 1892 Mr. Francis sold out his interest in that company, and

Henry Harris Francis.

in 1893, with others, organized the Middlesex Rubber Works Co. —later re-named the Omo Manufacturing Co.—at Middletown, and was its first president. He disposed of his interest and retired from the company in 1896. In 1897 the Omo Manufacturing Co. went into the hands of a receiver; but in February, 1898, it was reorganized with Mr. Francis as general manager. Later he became secretary and treasurer as well, and in 1901 he was elected president, treasurer and general manager. After its reorganization the Omo Manufacturing Co. became one of Middletown's most successful industries.

Mr. Francis was deeply interested in the welfare of the community in which he lived, and was ready to help in all worthy causes. He was an ardent Republican, a Free Mason and an Odd Fellow in good and regular standing, and was a thoroughly companionable man.

ALBERT FISCHER LEFT NEARLY $400,000.

An inventory of the estate of Albert Fischer, former president St. Paul Rubber Co., St. Paul, Minnesota, who died December 12 last, was filed for probate March 1. The estate is valued at $391,108.99. The largest items are $262,553.99 in cash and the Hibernian Hall property, valued at $125,000. The balance of the estate is personal effects. Forrest L. Fischer is administrator and the heirs are a sister, two nieces and two nephews.

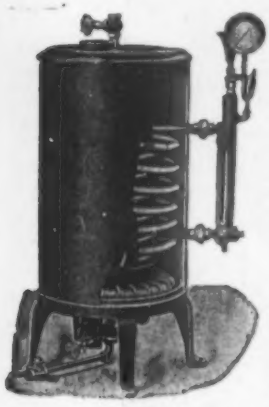
AS TO THE USE OF CHAINS ON TIRES.

It is obvious that a chain on the tire may under certain conditions be a great help, if not an actual necessity, but it is equally obvious that it is of no benefit to the tire itself under any conditions, and under many conditions it is a distinct injury, as, for instance, when it is used on paved streets, where the chain, not being able to sink into the pavement, has to sink into the tire. The B. F. Goodrich Co. has issued a special circular on the use of chains, giving illustrations of tires that have been badly abused by this device. Among other salutary pieces of advice, it says that the chain should not be fastened to the spokes, as that brings the wear at regular intervals and always on the same spot. Auto owners addicted to the use of the chain, can probably save themselves some money by perusing this circular.

RUBBER MACHINERY.

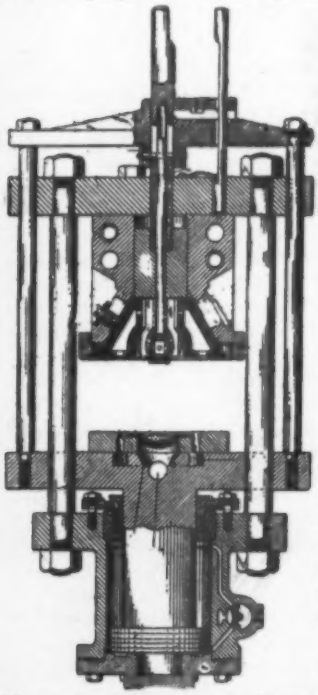
THE COIL STEAM GENERATOR.

THE accompanying illustration shows a coil steam generator, suitable for use in repairing plants of ordinary size. It stands only 37 inches high and weighs (when ready for shipment with all its accessories) only 400 pounds. It is made by the Williams Foundry & Machine Co., of Akron, Ohio, and is known as their "27." It is heated by gas or gasoline. It has a central 8-inch drum which serves as a water and steam reservoir, around which are two spiral coils of ¾-inch double strength pipe, through which water circulates. There are about 40 feet of pipe in these coils, and they, together with the central drum, are at all times exposed to an intense heat. The whole chamber is enclosed in an asbestos-lined jacket. It is economical and rapid in operation.



REMOVING GUTTA-PERCHA FROM GOLF BALLS.

The accompanying illustration shows a machine invented for the purpose of removing the gutta-percha covers or exteriors from golf balls that have rubber cores. This apparatus consists of a press having a number of dies, preferably perforated, which subject the golf ball to pressure, while the parts of the machine surrounding the golf ball are heated to a temperature of about 200 degrees F.



MACHINE FOR REMOVING GUTTA PERCHA COVERS FROM GOLF BALLS.

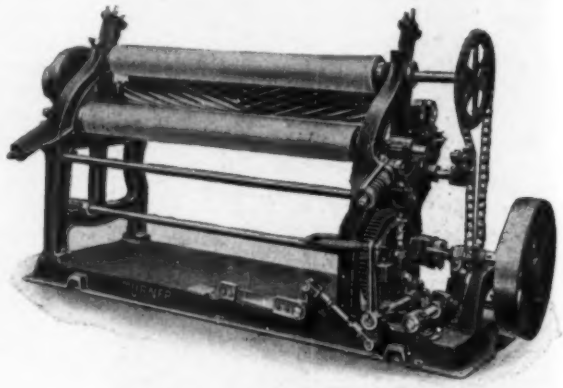
The gutta-percha, balata, or other similar substance that is used as a covering around the rubber core becomes soft and semi-fluid at that temperature and under pressure flows quite readily and can be squeezed out, while the vulcanized rubber thread or tape which forms the core is not affected by this temperature, but remains intact, and in this condition is expelled from the press.

The golf ball is dropped in at the top of the press, the parts adjacent to the ball are heated to the proper degree by means of steam, the gutta-percha squeezed out of the perforations and the remaining rubber core is then expelled from the machine.

It will surprise a good many people to learn that we are actually exporting hydro-aeroplanes. Mr. Glenn H. Curtiss, the hydro-aeroplane specialist, recently received an order from Russia and three from France for the style of machine which he has invented.

AN ENGLISH PUTTING OUT MACHINE.

The Turner Co., Ltd., Leicester, England, makes a specialty of hide and leather working machinery. The European headquarters of the company are at Frankfort-on-the-Main, Germany, the American house being the Turner Tanning Machinery Company, Peabody, Massachusetts.



THE TURNER PUTTING OUT MACHINE.

A recent machine of theirs which has met with great success is the Rubber Roll Putting Out Machine No. 156, a cut of which we give herewith. In working this the skins to be struck out are placed on a rubber roller which is lifted up by the mechanism connected with the foot treadle as shown in the cut, and then struck out by means of a felt roller and a brass bladed cylinder. This machine has met with great success and over 100 have been sold during the twelve months it has been on the market.

A MACHINE FOR ATTACHING EYELETS.

Eyelets and grommets are used very extensively in certain lines of rubber manufacture. Footwear, clothing, sundries and specialty manufacturers find them a necessity for fastenings and for threading. As a grommet is difficult to attach successfully without a grommeting machine, it also follows that the rubber manufacturers are the possessors of hundreds of machines. They are simple in the extreme, either to operate or understand, and are as useful as they are simple.

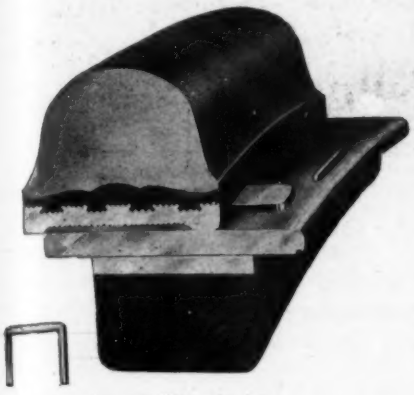
STIMPSON AUTOMATIC EYELETER.

The Edwin B. Stimpson Co., New York, makes the automatic feed foot-power eyeleter and grommeting machine, which is shown in the accompanying illustration. This company manufactures the grommets, eyelets and washers, and the automatic machine for applying them. They, however, state that they do not have on sale the machine that makes the grommets, but that is another story which must wait for another time.

New Rubber Goods in the Market.

GOODRICH WIRELESS TIRE.

THE Goodrich Wireless Tire has three integral parts—first a special steel base dove-tailed on the top surface; second, a hard rubber sub-base inseparably united with the steel base third, a soft rubber tread, vulcanized on the hard rubber sub-base. By a special process of manufacture, the union between these three component parts is made permanent, and separation is claimed to be impossible. No internal metal fastenings, such as wire, are imbedded in the rubber. The Goodrich Wireless Tire claims to last longer, to wear better because the rubber compound in the tread is perfectly adapted to the use to which it is put, and to be more resilient because of the sectional shape of the tire with its duplex curves. [The B. F. Goodrich Co., Akron, Ohio.]



LIGATURES IN FRANGIBLE TUBES.

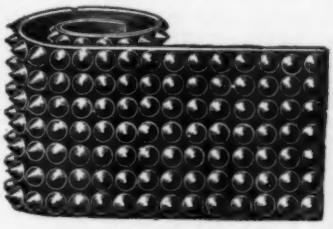
THE desirability of ligatures put up in such a way that they are always ready for use at a moment's notice, without any process of sterilizing, is obvious to anybody. It is something the surgical profession has long wanted. The Seabury frangible tube ligature appears to comply with these requirements. It is put up in a small glass tube and, being absolutely sterilized, is ready for use instantly on its removal from the tube. The accompanying cut shows one of these frangible tubes, the dark piece in the center being a rubber sleeve which plays an important part in this device. It serves two purposes—first, it enables the tube to be broken without cutting the operator's fingers or getting any glass in the ligature, and it also enables these frangible tubes to be shipped without danger, for if they are broken in transit, the break will occur under the rubber sleeve—where the tube is made thin and more readily breakable—and the fluid is kept from leaking out. To remove the ligature it is necessary merely to exert a little pressure at the point covered by the rubber sleeve. The tube breaks at that point and the upper part can be removed without spilling any liquid or doing any damage with broken glass. The method of using these ligatures is very simple. A little pressure is exerted at the thinest part of the tube under the rubber sleeve, which breaks the tube. The sleeve is then rolled back, the upper part of the tube removed and the ligature taken out for use. [Seabury & Johnson, New York.]

RUBBER-PROOFED AEROPLANE FABRICS.

A number of American manufacturers are making rubber-proofed fabrics for aeroplanes and dirigibles; but they are not the only ones, as this department of rubber manufacture has received considerable attention on the other side. "Aeroplatte" is the name of a rubber-proofed aeroplane fabric made in England, which is made rubber-proofed on one side, 39 inches wide, with a weight of 3¼ ounces per square yard, and also rubber-proofed on both sides, width 38 inches, with a weight of 4⅝ ounces per square yard. Both of these fabrics are subjected to a thorough strength test. Their color, it might be added, is light tan. [The Northern Rubber Co., Retford, England.]

CONE AND FISH-BONE RUBBER MATTINGS.

Among the many designs of rubber mattings now so ornamental, and at the same time practical, are two in very original patterns. One, in cone pattern, as shown in the illustration, is extremely attractive and particularly adapted for use at entrance ways to halls, offices or wherever a heavy tread is necessary. The other is a smooth fish-bone or herring-bone pattern, quite unique and very useful in halls and stairways, aisles or corridors in churches or theaters, or in any place, public or private, where ordinary carpeting would be used. These mattings come in rolls 6 yards long, 36 inches wide and in colors drab or red. [Dunlop Rubber Co., Ltd., Birmingham, England.]



CONE PATTERN.

FISH BONE PATTERN.

"SPRING BELT" WATERPROOFED ROBES.

THE new automobile robe is really a combination of a robe and a bag. It unites the two important functions required of a robe for winter driving, i. e., firstly: complete warmth and protection against the elements; secondly, the safety of absolute foot freedom and perfect control of the car, so necessary when roads are wet and slippery. It is absolutely waterproof, being either of rubber fabric on one side or else with an interlining of rubber. It is not fastened by snaps or buckles, but by a light spring, 1/16 of an inch thick and 1 inch wide, which clasps the body firmly well up under the arm pits and brings the two ends of the robe together at the back and *keeps* them there, but can instantly be removed with a pull at the front of the robe. The robe itself is 50 inches long and 60 inches wide. It has separate "Footpockets" of lined leather thoroughly waterproofed. This robe is as convenient for women as for men, and is much used by them. [Chicago Auto Robe Supply Co., Chicago, Illinois.]

A DAMP-PROOF JEWEL BAG.

One of the new notions found in the shops is a dainty jewel bag of rubberized cloth in light colors. These bags are lined with a fine quality of chamois, to protect the jewels and to keep them clean and bright. The rubberized outer covering is of great value, as it protects the jewels from the moisture given off from the body so continually. [John Wanamaker, New York.]

A "BUNNY" WATER BAG.

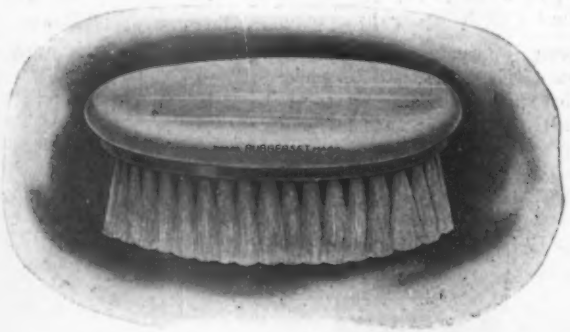
If you want to appeal to a child, do so through its imagination. Children are three-quarters imagination. For instance, a plain hot-water bag doesn't appeal particularly to a child; it is not interested in using it even when its physical condition may render it quite desirable, but convert that water bag into a "Teddy Bear" or some other especially attractive object and the child wants it at sight. Here is a new and unique hot-water bag that recognizes that principle. It is called the "Comfort Bunny," and is shaped and covered so that it looks like a white rabbit. It will be seen at a glance that the difficulty would not be to get a child to use it but to get a child to stop using it. [Mistress Patty G. Comfort, Andover, Massachusetts.]

TO CLEAN THE TREE BEFORE TAPPING.

It is fairly axiomatic to say that the best way to have clean latex is to keep it clean at the start. It is simpler and easier to keep it free from dirt than to remove the dirt later. The accompanying cut shows a brush with bristles of iron wire which is very useful in cleaning off the particular part of the rubber tree which is to be tapped, thus insuring a flow of latex free from dirt. [Jean Heybroek, Baarn, Holland.]

RUBBERSET AND ALBERITE.

It has been recognized for some time that the vulcanized hard rubber base of the Rubberset brush was practically imperishable; at least it far outlived the other parts of the brush. Then the problem was to make the rest of the brush as enduring as the hard rubber base which held the bristles. This quest seems to have been successful, and a new substance has been made up which equals in wear the rubberset base, and is used in connection with it. This substance is called "Alberite." It is a material similar to solid ivory, takes a very high polish, and is sanitary.



Complexion Brush.

Two brushes in which this composition is used are here illustrated—the complexion and the nail brushes. The first comes in two styles, and has white bristles, and the second comes in two sizes, has black and white bristles combined, and is guaranteed indestructible. [Rubberset Co., Newark, New Jersey.]

Nail Brush.

WATERPROOF CASE FOR BITS.

This is not only a very practical cover but an exceedingly useful one. The case is made of waterproof canvas, with separate compartments for each bit and extra cutter, protecting the cutting edges of both. The inside pocket for the extra cutter keeps it always within reach. It is not liable to slip out of sight, but when wanted can be readily found. [C. E. Jennings & Co., New York.]

TESTER FOR FLY-WHEEL SPOKES.

A device for detecting an imperfect flywheel is shown in the illustration. It is quite similar to a physician's stethescope and works practically in the same way. The transmitters and receivers are the same as used in the telephone, and the tubing is of rubber.

It is, in fact, simply an instrument for magnifying sound, so that a difference of sound that would not be perceptible to the unaided ear becomes very readily detected.

The pin in the end of the transmitter is held close against the object to be examined. This instrument is also used to test parts of machines which are in motion but cannot be seen. It has been adopted by the National Tube Co. of Pittsburgh, Pa.

News of the American Rubber Trade.

REPORT OF THE CANADIAN CONSOLIDATED RUBBER CO.

IN the last annual report of the Canadian Consolidated Rubber Company, given out the last of February by the president, D. Lorne McGibbon, he states that the operations for the year 1911 resulted in an increase of 22 per cent. in the sale of general rubber goods, and that there was an increase in the volume of footwear sales—though a lower net return, owing to the reduction in price. He calls attention to an important development in the footwear department in the way of selling directly to the retailer, through the establishment of a large number of selling branches, the total number of which is now twenty-seven. The report continues:

"The total manufacturing profits of the subsidiary companies amounted to the sum of $489,465.32, from which has to be deducted the sum of $74,154.80, being the net cost to the Consolidated Company for marketing the products of the subsidiary companies, in excess of the commissions to which it was entitled under its selling arrangement with the subsidiary companies. It was necessary to fix an arbitrary commission for the first year, which commission, although not sufficient to meet all the expenses for the first year, your board believes to be a fair one, as in future the Consolidated Company will not have to incur the extraordinary expenses already referred to in connection with the establishment of its new organization to act as selling agents for the subsidiary companies.

"The total net profits of the Consolidated Company and its subsidiary companies for the past year amounted to the sum of $415,310.52, and the payments for bond interest, preferred and common dividends, amounted to $405,842.

"During the year extensive improvements and additions have been made, costing $742,650.84."

A SUCCESSFUL DERESINATING PLANT.

During the year of 1909 and the early part of 1910 conditions in the rubber market looked favorable for the production of good grade rubbers derived from low grade gums, such as Guayule, Pontianak, etc., to compete in certain lines of manufacture with Pará and plantation products.

With this idea in view the Acushnet Process Co., of New Bedford, Massachusetts, was organized in the spring of 1910 by Francis R. Peabody, of Akron, Ohio; Philip E. Young, of Dedham, Massachusetts, and Allen T. Weeks, of New Bedford, Massachusetts, all of whom are actively engaged with the company and own practically all the stock. Mr. Peabody has had twelve years' experience in the deresinating business and brought many new and advanced ideas for the design of the factory.

Construction was immediately commenced and in November manufacturing was actively begun. The factory is particularly well designed and is adapted to the deresination of gum that contains resin in any form or quantity, and also for the recovery of unvulcanized rubber in friction and miscellaneous clippings. The capacity of the factory varies with the nature of the gums to be treated, from a daily average consumption of about 10,000 pounds of Guayule to 30,000 pounds of Pontianak.

The company has a well-equipped laboratory for testing samples of crude gums for yield and quality, and is always glad to try out any gums sent them and give estimates.

The location in New Bedford was decided upon by reason of its accessibility to New York; a daily freight steamer supplying faster, more dependable and cheaper service than can be had by rail transportation. By this means the company is in a position to obtain and supply goods in a very short time.

The rubber obtained is washed and in most cases vacuum-dried, though some manufacturers prefer to do their own drying, in which case the rubber is shipped out wet. Yields from the crude vary widely with the different gums to be deresinated, and often a large variation is found in different brands of the same gum. But by reason of observations extending over many years, the variation in yield is a pretty well-known factor and business is frequently done with a guaranteed yield from the crude.

Deresinated rubbers require more care in washing and drying than is given Pará, but in the finished goods often give a higher tensile strength, and are very durable, as shown by exhaustive tests and actual experience. They are well adapted for specification work, as the resin content is easily controlled between the range of 1 per cent. to 7 per cent., and in general they give remarkably good physical tests.

The deresinating business has been good, and for the past six months the factory has been running day and night. Plans are already being laid to take care of the rapidly increasing business by a further addition to the plant, which will double its capacity.

THE B. & R. RUBBER CO.

The B. & R. Rubber Co., North Brookfield, Massachusetts, has filed with the Secretary of State of Massachusetts a statement of its financial conditions, as required by the statutes, for the business year ending December 31, 1911, the details of which are reproduced below:

ASSETS.

Land and buildings	$ 54,870.33
Machinery, tools and fixtures	139,121.51
Merchandise	82,291.71
Cash and receivables	83,730.85
Good will	175,000.00
Reserves for prepaid taxes, insurance, etc	2,406.56
	$537,420.96

LIABILITIES.

Capital, preferred	$260,000.00
Capital, common	240,000.00
Accounts payable	8,208.08
Surplus	29,212.88
	$537,420.96

Liberal allowances have been made for depreciation, and the surplus shown in the statement of December 31, 1910, has been adjusted by the new auditors for the new treasurer, as follows:

Surplus January 1, 1911, as per books		$57,232.04
Less dividends declared December 31, 1910, but entered on the books in January, 1911 (mostly accumulated dividends on preferred stock)	$27,192.00	
Less other items pertaining to 1910, but on books in 1911	4,930.09	32,122.09
Leaving an adjusted surplus January 1, 1911		$25,109.95

Dividends, reserve for depreciation, bad debts written off, have been deducted from net earnings, and the surplus has been increased $4,102.93.

MACHINERY OF THE NEWARK RUBBER CO. GOES TO BUFFALO.

The Frontier Tire and Rubber Co., Buffalo, New York, has purchased the entire plant of the Newark Rubber Co., of Newark, New Jersey, consisting of machinery and equipment intended for rubber tire manufacture. This additional machinery will very considerably increase the facilities of the Frontier company.

NEW INCORPORATIONS.

Climatic Raincoat Co., March 22, 1912; under the laws of New York; authorized capital $10,000. Incorporators: Rupert M. Williams, 250 West Fifty-third street; Simon and Bertha Lippman—both of 1102 Simpson street, Bronx—all of New York. To manufacture raincoats and materials for same. Location of principal office, New York.

Copithorn Demountable Rim Co., February 6, 1912; under the laws of Massachusetts; authorized capital $100,000. Incorporators: Walter E. Copithorn, Harry M. Ferguson, both of Natick, Massachusetts, and Louis C. Smith, Newton, Massachusetts. To manufacture, sell and deal in rims, tires and wheels for automobiles, etc.

John A. Cordes, Inc., February 28, 1912; under the laws of New York; authorized capital $10,000. Incorporators: John A. and Edward R. Cordes, both of 595 Park avenue, Brooklyn, New York, and H. F. Hockendorn, Lynbrook, New York. Location of principal office, Brooklyn, New York. To manufacture all kinds of heels.

The Dayton Airless Tire Sales Co., February 27, 1912; under the laws of New York; authorized capital $10,000. Incorporators: John Schoepflin, Hamburg, New York; J. Louis Seligman, Buffalo, New York, and Albert L. Stratemeier, Hamburg, New York. Location of principal office, Buffalo, New York. To deal in auto tires.

The Detachable Shoe Heel Co., March 13, 1912; under the laws of New York; authorized capital $25,000. Incorporators: Anton Mitlehner, 417 Willis avenue; William Wagner, 3116 Third avenue, and Emma J. Bergman, 408 East 142d street—all of New York. Location of principal office, New York.

Higrade Sample Shoe Co., March 22, 1912; under the laws of New York; authorized capital, $25,000. Incorporators: Morris Javitz, 835 Beck street, Bronx; Samuel C. Meyer, 2144 Seventh avenue, both of New York City, and Abraham Golden, 902 DeKalb avenue, Brooklyn, New York. To deal in shoes, rubbers, etc.

The Mansfield Tire and Rubber Co., February 19, 1912; under the laws of Ohio; authorized capital $300,000. Incorporators: Walter F. and George W. Henne, and C. R. Grant. To manufacture and sell rubber products and handle automobile sundries.

The Pneumatic Dress Form Co., March 19, 1912; under the laws of New York; authorized capital $200,000. Incorporators: Cecil D. Mackie, 511 West One Hundred and Thirteenth street, New York; Theodore N. Ripsom, Hempstead, New York, and Wm. E. White, 24 Fort Greene place, Brooklyn, New York. To manufacture pneumatic dress forms.

Weldon Roberts Rubber Co., March 12, 1912; under the laws of New Jersey; authorized capital $100,000. Incorporators: Weldon Roberts, 117 Mechanic street; Peter F. Campbell, 92 Broad street, both of Newark, New Jersey, and Albert H. Sonn, 89 Sherman place, Jersey City, New Jersey. The company has been incorporated for the object of growing and dealing in crude rubber, and all goods of which rubber is a component part.

Standard Resilient Wheel Co., Inc., March 16, 1912; under the laws of New York; authorized capital, $500,000. Incorporators: Joseph Gaynor, 551 Fourth street; Philip B. Verplank, 2122 Fifth street, both of Brooklyn, New York, and Solomon Jochelson, 457 Grand street, New York. Location of principal office, New York. To manufacture resilient wheels, tires, etc., for automobiles and other vehicles.

F. William Stocker, Inc., March 5, 1912; under the laws of New York; authorized capital, $50,000. Incorporators: F. W. Stocker, 1015 Garden street, Hoboken, New Jersey; Walter L. Hull, 2569 Bedford avenue, Brooklyn, New York, and J. Frank Steers, Lynbrook, Long Island. To manufacture and deal in waterproofing materials. Location of principal office, New York.

Strong Rubber and Asbestos Manufacturing Co., March 25, 1912; under the laws of New York; authorized capital, $75,000. Incorporators: Charles E. Strong, Louis E. Strong and Alexander D. Currie, all of 48 Franklin street, New York. Location of principal office, New York.

United States Rubberoline Manufacturing Co., February 16, 1912; under the laws of New Jersey; authorized capital, $50,000. Incorporators: Charles H. Weller, Harvey B. Hall and Lee J. Cain, all of 75 Montgomery street, Jersey City, New Jersey. To manufacture artificial rubber, waterproofing materials, etc.

Woodside Manufacturing Co., February 28, 1912; under the laws of New York; authorized capital, $25,000. Incorporators: Edwin C. Sharp, 176 Macon street, Brooklyn, New York; Wm. J. Martin, 114 West Sixty-fourth street, and Henry H. Hunter, 350 West Seventy-first street, both of New York. Location of principal office, New York. To manufacture elastic webbing goods, etc.

Yorkshire Manufacturing Co., February 26, 1912; under the laws of New York; authorized capital, $15,000. Incorporators: Edward A. Brown, Ralph and Samuel Cohen, all of 135 Broadway, New York. Location of principal office, New York. To manufacture raincoats, etc.

PROCESSES FOR THE USE OF "AMAX" MINERAL RUBBER.

Recognizing the importance of submitting their "Amax" mineral rubber to the test of practical use, and of thus demonstrating its properties, the American Wax Co., of Boston, has published a concise and interesting booklet in German. It contains full explanations and instructions; its value being increased by a number of recipes for the various compounds in which "Amax" can be used in the manufacture of solid tires, motor-truck and automobile tires, hoof pads, heels, wagon covers, bicycle tires, valves, mats, etc.

A carefully written introduction enunciates the properties of "Amax," showing that it is 99.84 per cent. pure, is not porous and is easily worked; so that a large portion of the elasticity of the crude rubber is preserved, which would otherwise be lost through the admixture of dry coloring substances. On the contrary the strength of the vulcanized product is materially increased by the use of "Amax."

This useful booklet has been compiled by Mr. W. C. Coleman, general manager, and forms a valuable feature of the export propaganda in which the company is so actively engaged. It is contemplated to reproduce this booklet in English, which will materially enlarge the scope of its influence.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of india-rubber and gutta-percha for the month of January, 1912, and for the first seven months of five fiscal years, beginning July 1:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All Other Rubber.	TOTAL.
January, 1912.....	$138,544	$86,483	$489,541	$714,568
July-December, 1911.	1,158,878	990,009	3,498,202	5,647,089
Total, 1911-12.....	$1,297,422	$1,076,492	$3,987,743	$6,361,657
Total, 1910-11.....	1,215,134	1,600,041	3,397,718	6,212,893
Total, 1909-10.....	1,096,459	1,371,199	2,739,953	5,207,611
Total, 1908-09.....	803,067	958,671	2,088,524	3,850,262
Total, 1907-08.....	844,811	1,252,153	2,209,938	4,306,902

The above heading "All Other Rubber," for the month of January, 1912, and for the first seven months of two fiscal years, beginning July 1, includes the following details relating to Tires:

MONTHS.	For Automobiles.	All Other.	TOTAL.
January, 1912.....	$161,337	$36,805	$198,142
July-December, 1911.....	1,213,000	254,655	1,467,655
Total, 1911-12.....	$1,374,337	$291,460	$1,665,797
Total, 1910-11.....	1,015,673	319,022	1,334,695

THE REPUBLIC RUBBER CO.

At the annual stockholders' meeting of the Republic Rubber Co., Youngstown, Ohio, held on the fourth Monday of January, the stockholders elected the same board of directors for the ensuing year. The following officers were chosen: President, Thomas L. Robinson; vice-presidents, L. J. Lomasney and L. T. Petersen; secretary, C. F. Garrison; treasurer, M. I. Arms, second. The statement for the year showed a large increase in business, and the completion of a number of improvements to the plant. In addition to the new buildings completed in 1911, the company will erect, during the year 1912, a five-story building, 80 x 200 feet, which will be used for the finishing departments. The new calender building will be in operation by the middle of the year. The company has recently disposed of an additional $500,000 of preferred stock, which will bring its issued capital to $4,000,000.

OFFICERS OF THE REVERE RUBBER CO.

At the annual meeting of stockholders of the Revere Rubber Co., held February 26, 1912, the following directors were duly elected: Charles C. Case, Samuel P. Colt, Homer E. Sawyer, Harry E. Converse, James B. Ford, Lester Leland, Elisha S. Williams; and at the meeting of the board of directors for organization, held March 27, 1912, the following officers for the ensuing year were duly elected: president, Elisha S. Williams; vice-president, Charles C. Case; treasurer, William H. Gleason; assistant treasurer, Albert Y. Tucker; secretary, William H. Gleason; assistant secretary, John D. Carberry.

THE HOOD RUBBER CO.'S BALANCE SHEET FOR 1911.

Below is given a condensed balance sheet, as to December 31, 1911, of the Hood Rubber Co., Boston, Massachusetts:

ASSETS.

Plant	$2,000,000.00
Merchandise	954,166.83
Receivables	1,511,037.31
Cash	274,236.63
Stock owned in other Corporations	487,578.09
Patents	1,000.00
	$5,228,018.86

LIABILITIES.

Capital Stock, Common	$1,000,000.00
Preferred	1,500,000.00
Notes Payable	740,000.00
Surplus	1,988,018.86
	$5,228,018.86

I have examined the books of the Hood Rubber Co., and HEREBY CERTIFY that the Condensed Balance Sheet shown hereon states the true condition of the Hood Rubber Company, books.

EDW'D P. COMINS,
Boston, Mass., as of December 31, 1911, as disclosed by its Certified Public Accountant.

March 14, 1912.

TYER RUBBER CO.

The Tyer Rubber Co., of Andover, Massachusetts, have placed the contract for the building of their new automobile tire factory with the B. F. Smith Construction Co., of Pawtucket, Rhode Island. Work will be begun at once, and it is expected that the mill will be producing tires by August 15, 1912. The latest and most modern machinery will be installed, and the highest quality of goods manufactured. It will have a capacity of 600 tires per day, and will employ about four hundred hands. Charles T. Main, of Boston, is the architect and engineer of this plant.

BUT PRICES SOMETIMES DO COME DOWN.

The New York "World," in a recent editorial, referring to the threatened advance in the price of leather shoes, because of the increased cost of material and labor, contains this observation:

"It is a poor rule that works only one way. If there were occasional examples of voluntary reduction of price, if the consumer were sometimes given the benefit of decreased cost or of economies of production such as might be applied in this case, there would be less complaint when prices are raised by manufacturers on legitimate grounds."

But, manufacturers do occasionally reduce their prices, as was noticed and commented upon in the March number of THE INDIA RUBBER WORLD, where it is shown that the recent decrease in the price of rubber footwear would aggregate an annual saving to the consumer of about $5,000,000—i. e., provided the retailer passes along the reduction that comes to him.

RUBBERS FOR FEATHERED SHOES.

A New York daily, among its highly important news received by wireless telegraphy, recently gave the following interesting item to the effect that Parisiennes are to display the plumage of birds on their feet. The paragraph is as follows: "The very latest note of elegance in footwear is declared to be shoes covered with birds' plumage of the most elegant hues, gummed on to the leather. No color effect is too gaudy for the coming season's shoe, and the iridescent plumage of the golden pheasant and the bird of paradise will decorate the low-cut, high-heeled shoes which will be worn. Ibis plumage will also be employed."

If this new fashion of wearing feathers on leather shoes should ever obtain on this side of the water (as a matter of fact, some of the enterprising New York stores have already displayed this feathered footwear in their windows), it will be incumbent upon manufacturers of rubber shoes to get in line with suitable decorations for their products—as, for instance, the fine, glossy leaves of that familiar household plant, the *Ficus Elastica Brooklyniensis*.

HOOD RUBBER CO.—COMPARATIVE STATEMENT OF SIX DIFFERENT YEARS.

The table below gives a comparative statement of the condition of the Hood Rubber Co., at intervals of three years, from 1897—the first year after its formation—to the close of 1911. This table tells in succinct form a story of continuous and exceedingly rapid progress, the assets at the end of 1911 being nearly 11 times the assets at the end of 1897.

ASSETS.

	Oct. 1, 1897.	Oct. 31, 1900.	Oct. 31, 1903.	Dec. 31, 1906.	Dec. 31, 1909.	Dec. 31, 1911.
Plant	$189,801.50	$555,000.00	$770,000.00	$1,300,000.00	$1,400,000.00	$2,000,000.00
Merchandise	120,684.79	258,512.64	649,516.84	843,872.28	626,281.04	954,166.83
Receivable	170,226.82	346,582.54	367,196.45	625,541.41	1,640,438.91	1,999,615.40
Cash	16,499.19	35,068.23	68,771.81	118,930.01	233,998.91	274,236.63
	$497,212.30	$1,195,163.41	$1,855,485.10	$2,888,343.70	$3,900,718.86	$5,228,018.86

LIABILITIES.

Capital Stock	Common	$253,000.00	$750,000.00	$1,000,000.00	$1,000,000.00	$1,000,000.00	$1,000,000.00
	Preferred	.....	.....	.....	.....	1,000,000.00	1,500,000.00
Debt		242,572.70	290,000.00	685,000.00	960,000.00	470,000.00	740,000.00
Surplus		1,639.60	155,163.41	170,485.10	928,343.70	1,430,718.86	1,988,018.86
		$497,212.30	$1,195,163.41	$1,855,485.10	$2,888,343.70	$3,900,718.86	$5,228,018.86

UNITED STATES RUBBER CO.'S ISSUES.

Transactions on the New York Stock Exchange for four weeks, ending March 23:

COMMON STOCK, $25,000,000.

[The treasury of a subsidiary company holds $1,334,000.]

Last Dividend, January 31, 1912—1%.

Week	March	2...Sales	2,775 shares	High	46½	Low	45⅞
Week	March	9...Sales	15,150 shares	High	48⅞	Low	46¼
Week	March	16...Sales	34,350 shares	High	52¾	Low	48¼
Week	March	23...Sales	20,300 shares	High	53⅛	Low	51

For the year—High, 53⅛, March 21; Low, 45¼, February 1.
Last year—High, 48½; Low, 30½.

FIRST PREFERRED STOCK, $39,824,400.

Last Dividend, January 31, 1912—2%.

Week	March	2...Sales	600 shares	High	110	Low	110
Week	March	9...Sales	800 shares	High	110¾	Low	110
Week	March	16...Sales	1,543 shares	High	112½	Low	110½
Week	March	23...Sales	1,435 shares	High	114	Low	111⅝

For the year—High, 114, March 22; Low, 109, January 30.
Last year—High, 115½; Low, 104.

SECOND PREFERRED STOCK, $9,965,000.

Last Dividend, January 31, 1912—1½%.

Week	March	2...Sales	.... shares	High	...	Low	..
Week	March	9...Sales	300 shares	High	75⅞	Low	75
Week	March	16...Sales	2,300 shares	High	78⅜	Low	76
Week	March	23...Sales	1,050 shares	High	78¾	Low	77¾

For the year—High, 78¾, March 22; Low, 75, January 23.
Last year—High, 79; Low, 66.

SIX PER CENT. TRUST GOLD BONDS, $19,000,000.

Outstanding of the 1908 issue of $20,000,000.

Week	March	2...Sales	42 shares	High	105	Low	104⅞
Week	March	9...Sales	54 shares	High	105	Low	104⅝
Week	March	16...Sales	65 shares	High	104¾	Low	104½
Week	March	23...Sales	43 shares	High	104⅝	Low	104½

For the year—High, 105, February 24; Low, 103¾, January 6.
Last year—High, 105; Low, 101¾.

TRADE NEWS NOTES.

The directors of the Converse Rubber Shoe Co., Malden, Massachusetts, recently voted to increase the capital stock of that company from $400,000 to $600,000 by issuing preferred stock to the amount of $175,000, and general stock to the amount of $25,000. The preferred stock is preferred both as to dividends and assets, and is a 7 per cent. cumulative stock.

The Manufactured Rubber Co., Philadelphia, Pennsylvania, paid a quarterly dividend of 1½ per cent. on March 1 on its preferred stock.

Auerbach Brothers Co., Chicago, Illinois, dealers in scrap rubber, have removed their office from 3101 Market square to 713 Postal Telegraph building, of that city.

The New York section of the Society of Chemical Industry held a meeting at Rumford Hall, Chemists' building, 52 East Forty-first street, New York, on the evening of March 22. Addresses were made by Alcon Hirsch and Thomas W. Pritchard. An informal dinner, attended by many members of the club, preceded the addresses.

J. H. Lane & Co., whose offices have been located for some time at 110 Worth street, New York city, intend, on the first of May, to move into new quarters at Fourth avenue and Twenty-fifth street. This is the first up-town movement among the large selling agents for cotton mills, but, undoubtedly, it is only the beginning of a general movement among such agents to the up-town district.

The Consolidated Rubber Tire Co., New York, reports earnings for its fiscal year sufficient to pay 4 per cent. interest on the $2,850,500 debenture income bonds, and the full rate will be paid on April 1, when it falls due. The highest rate hitherto paid on the bonds was 3½ per cent. in 1909. As a result of the proposed payment the bonds advanced to the highest price on record, the rise also carrying along both common and preferred stocks.

C. W. Martin who so successfully handled the Southern business of the Goodyear Tire and Rubber Co., from Atlanta, Georgia, has been given charge of the solid tire business of the company and will hereafter make his headquarters at Akron.

THE Standard Tire and Rubber Co., Springfield, Massachusetts, has been formed as a selling corporation to handle the goods in western Massachusetts, Vermont and adjacent territory of the Standard Tire and Rubber Co. and the Standard Auto Supply Co., of Boston. The purpose in forming this new company was to handle the business in the Springfield territory to better advantage.

A tire dealer in Denver, Colorado, made an effective window display by cutting two strips an inch wide out of an inner tube and suspending from them an anvil weighing 150 pounds. The rubber not only stood this strain for a week's time but after the weight was removed is said to have returned almost to its original length.

THE Converse Rubber Shoe Co., Malden, Massachusetts, is venturing into the tire field. It has been making some tires for the last four months—not a large number to be sure, preferring to enter this field slowly and giving its product a thorough testing before it embarks on tire making in a large way. It expects, however, in due time to have a fairly extensive tire department.

The Seamless Rubber Co., of New Haven, Connecticut, has increased its capital stock from $500,000 to $1,000,000.

The new policy recently adopted by the United States Tire Co., of discontinuing the selling of tires direct to the consumer, has cut off a considerable source of revenue. But it is not likely to result in anything more than a temporary loss; as it was done in order to show the trade the company's friendly attitude, and, of course, the dealers will be thoroughly in sympathy with this new move.

The annual meeting of stockholders of the Rubber Goods Manufacturing Company, for the election of directors and the transaction of other business, will be held at the principal office of the company, 15 Exchange place, Jersey City, New Jersey, on Thursday, April 11, 1912, at 12 o'clock noon.

At a meeting of the directors of the Rubber Goods Manufacturing Company, held March 6, a dividend of 6 per cent. was declared on the common stock. This is an increase of 3 per cent. over the previous dividend, paid last December. The usual quarterly dividend of 1¾ per cent. was also declared on the preferred stock. Both dividends were paid March 15 to stock of record March 9.

The Intercontinental Rubber Co., New York, declared the regular quarterly dividend of 1¾ per cent. on its preferred stock, payable March 30.

At the annual meeting of the Bishop Gutta-Percha Co., held at their office, 420 East Twenty-fifth street, New York City, on January 17, the following officers were elected: Henry A. Reed, president; Henry D. Reed, vice-president; W. Boardman Reed, treasurer; Louis F. Reed, secretary. The Board of Directors consists of the above-named officers.

Many departments of the plant of the Boston Woven Hose & Rubber Co., Boston, are driven at full capacity on a twenty-four-hour basis, and the others are operating at an increase over the normal rate. Shipments for the month of February were greater than any previous month in the history of the company.

The salesmanager of the company, Mr. E. E. Fay, has just returned from an extended trip through the Southern States and reports conditions generally favorable for a larger business in this section. The company's new offices at Cambridge have been completed and are now occupied. These offices are roomy and light, allowing ample space for the present needs of all departments and their future growth. Some of the modern features are indirect lighting and a carrier system operating continuously to and from all departments.

The Candee Rubber Co. closed its factory on March 27, and will reopen on April 4. The fiscal year of the company ends on March 31, and the shut-down is for the annual stock-taking.

PERSONAL MENTION.

Mr. Henry C. Pearson, editor of The India Rubber World, who has passed the last four months in the tropics—particularly in Barbados, Trinidad and the coast section of Venezuela, devoting a great deal of time to the consideration of the rubber growing problem in those sections—embarked for home on March 25, and is expected in New York, April 13.

Elon Huntington Hooker, of 512 Fifth avenue, president of the Hooker Electrochemical Co., 40 Wall street, has been appointed treasurer of the Roosevelt Campaign Committee of New York City.

Gray Staunton has resigned from the Vulcanized Products Co., Muskegon, Michigan, formerly known as the Staunton Dielectrite Rubber Co., and is connected with that company now only as a stockholder.

AMERICAN GOODS IN HOLLAND.

Mr. J. Polack Grödel, of the "Amerikaansche Handelmaatschappij," which being interpreted, means American Mercantile Co., Amsterdam, Holland, has been making a flying visit to various parts of the United States, including New York, Chicago and Ohio points.

He arrived on the *Ryndam* March 5, and returned on the *George Washington* March 23. Mr. Grödel was in this country about 3½ years ago, and since that time has been acting as representative in Holland and Belgium for several American rubber concerns, including the Goodyear India Rubber Selling Co., New York; Davidson Rubber Co., Boston, Massachusetts, and Davol Rubber Co., Providence, Rhode Island. During his recent visit he secured the representation for the same territory for the Miller Rubber Co., Akron, Ohio.

Before Mr. Grödel arranged with these companies to market their goods, no American druggists' sundries were sold in either Holland or Belgium—the German goods having that entire market. He has been very successful in introducing American goods—hot water bottles and fountain syringes, being in particular demand. These goods are more attractive than the German goods which they have displaced, and his customers have now discovered that they also have the very desirable feature of quality. Incidentally, it might be said that Mr. Grödel has such complete faith in American products that he married a Chicago girl.

TIRE MAKERS LIKE THESE RIVETS.

The rivets made by the Dubied Machinery Co., 45 West Thirty-fourth street, New York, have proved very popular. They are not only used by the Goodrich, Diamond and other prominent American manufacturers of tires, but they are extensively used by European manufacturers, among them the Michelin, Continental, Dunlop and Bergougnan companies. The secret of the success of these rivets seems to lie in the fact that while the stems are kept soft all through, making it possible to rivet them easily and completely, the heads are absolutely hard all through, giving the maximum of service.

TRADE MARK PROTECTION.

For the benefit of those interested respectively in the legal and commercial aspects of trade mark protection, the monthly publications of the United States Trade Mark Association afford comprehensive reports of trade mark decisions and pending litigation. When it is remembered that decisions have often to stand various appeals before acquiring binding force, the value of the "Trade Mark Reporter" and the "Bulletin of the United States Trade Mark Association" will be recognized by those desirous of following them up through their various stages of litigation.

NEW JERSEY RUBBER INDUSTRIES.

(RUBBER GOODS HARD AND SOFT.)

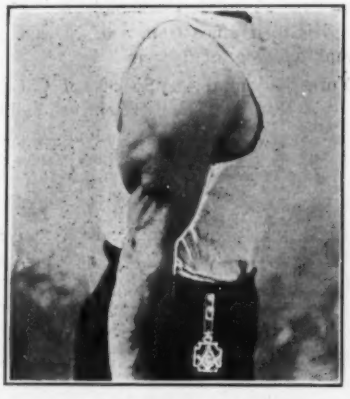
	1908	1909	1910
Number of establishments	43	48	51
Capital invested	$20,331,839	$25,633,889	$28,902,913
Value of stock used	$15,852,257	$19,049,186	$23,647,377
Wages paid	3,461,070	3,800,066	4,356,028
Value of goods made	24,494,363	30,616,077	34,733,592
Average proportion of business done to capacity	67.67%	77.39%	77.80%
Average number employed	6,641	7,450	8,459
Average yearly earnings per employee	$521	$510	$515
Average number of days in operation	275	283	284
Average number of hours per week	57	58	57
Factories working overtime	9	14	17
Total hours of overtime	127	163	187
Horsepower used	23,283	24,301	24,674

RUBBER STAMPS IN MANILA.

A recent issue of a Baltimore daily contains an interesting story of one Jacob Baumgarten, who, for many years, has been in the engraving and rubber stamp business in that city, but who is now well on his way to the Philippines—having sailed from San Francisco some three weeks ago—for the purpose of starting a rubber stamp factory and engraving plant in Manila. His attention was attracted to this field of operation by a retired United States naval officer, who will be interested with him in this new undertaking. There ought certainly to be sufficient field in Manila for a rubber stamp and engraving plant. The rubber stamp is a good index of the commercial progress of any community, and Manila, with a rubber stamp factory in her midst, may now properly take her place among the commercial centers of the earth.

TIRE REPAIRING AS A MUSCLE MAKER.

The superintendent of a tire factory a month or so ago came out with the statement that tire making was quite as conducive to the promotion of muscle as a course in a gymnasium, and cited, by way of illustration, a number of strong men he had in his force, who had become strong men since taking up the work of tire making. Tire repairing seems to be just as conducive to



Tire Repairing Arm.

muscle building as the making of tires, as may be seen by the accompanying illustration, which looks like a cross section of Sandow. This, however, is a partial photograph of J. Abrahams, of Freehold, New Jersey, who has been repairing tires for a number of years, and owes that formidable muscular formation to this occupation. He was formerly connected with the Dow Tire Co., and, incidentally, he utilizes some of his time in equipping and systematizing rubber tire repair departments.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED FEBRUARY 6, 1912.

NO. 1,016,281. Adjustable hose nozzle holder. C. J. Lundquist, assignor of one-half to E. O. Winstrand, both of Minneapolis, Minn.
1,016,286. Screw stopper for bottles and other receptacles. J. Nightingale and J. Sackett, Charlton, England.
1,016,330. Vehicle wheel. E. B. Killen, London, England.
1,016,349. Patch for pneumatic tires. C. W. McKee, San Diego, Cal.
1,016,364. Means for automatically inflating tires of vehicle wheels while in motion. J. I. Rodway, and J. Esson, Johannesburg, Transvaal.
1,016,406. Sap gatherer. J. M. Harrison, Cora, Fla.
1,016,472. Tire. T. V. Buckwalter, Altoona, Pa.
1,016,483. Apparatus for producing rubber coated blanks. W. W. Duncan and N. E. Tousley, Watertown, Mass., assignors to Hood Rubber Co., Boston, Mass.
1,016,534. Spring wheel. H. E. Wirebaugh, Canton, Ohio.
1,016,558. Pneumatic attachment for vehicle wheels. H. Garrison, Chicago, Ill.
1,016,632. Sprinkler for spraying areas of definite shape. G. H. Hunter, Redlands, Cal.
1,016,673. Vehicle wheel. W. J. Cunningham, Philadelphia, Pa.
1,016,709. Tire. J. J. Patton, New York.
1,016,778. Heating apparatus. G. Rose, Paris, France.
1,016,812. Tire protector. J. L. Barnes, Des Moines, Iowa.
1,016,846. Antiskidding attachment for wheels. C. H. Myers, Franklin, Pa.
1,016,871. Resilient wheel. H. W. Brooks and S. F. Krupp, Memphis, Tenn.
1,016,896. System for inflating pneumatic tires. C. A. Rivers, Denver, Colo.

ISSUED FEBRUARY 13, 1912.

1,016,991. Elastic tire. C. Herold, Brunn, Austria-Hungary.
1,017,228. Horseshoe. J. A. Neil, assignor of one-half to J. E. Gale, and one-eighth to J. A. Donaldson, all of Washington, D. C.
1,017,259. Elastic wheel. L. Antoine Garchey, Paris, France.
1,017,265. Hose patch. S. McRae and J. H. Blom, Everett, Wash.
1,017,271. Laminated cohesive interwound fabric band. L. A. Subers, Cleveland, Ohio.
1,017,288. Piano shield. C. W. Graves, Logansport, Ind.
1,017,314. Cushion sole. A. Reed, St. Joseph, Mo., and D. A. Reed, Bozeman, Mont.
1,017,330. Spring wheel. F. Smith, Rossville, Ga.
1,017,332. Elevator safety device. F. Sowinski, Detroit, Mich.
1,017,363. Wheel. J. L. Adamson, Brooklyn, N. Y.
1,017,466. Vehicle wheel rim. G. T. Reichenbach and H. O. Peck, assignors to H. O. Peck Automobile Wheel Co., all of Portland, Ore.
1,017,482. Method of manufacturing lawn tennis and like balls. J. Turner, and A. Buxton, Uxbridge, England, assignors to The Rubber Patents, Ltd., Cowley, England.
1,017,532. Hose reel. R. W. Glenn, Fruitvale, Cal.
1,017,598. Tire. A. Seelig, Wilmersdorf, Berlin, Germany.
1,017,608. Piano protector. W. R. Turner, Wallace, Idaho.
1,017,638. Hose nozzle. G. W. McCoole, Hot Springs, Ark.

Designs.

42,164. Golf ball. F. C. Breakspear, Chicopee, Mass., assignor to A. G. Spalding & Bros., Jersey City, N. J.

Trade Marks.

40,656. Peerless Rubber Mfg. Co., New Durham, N. J. The word *Arctic*. For packing composed of rubber or rubber compound.
52,269. The Goodyear Tire & Rubber Co., Akron, Ohio. The words *Blue Streak*. For elastic vehicle tires.
59,364. Bowers Rubber Works, San Francisco, Cal. The words *Gee-Whiz*. For rubber hose, packing, belts, etc.
60,233. C. F. Wren, Cleveland, Ohio. The word *Ferromatic*. For elastic tires, etc.
60,358. Standard Underground Cable Co., Pittsburgh, Pa. The word *Excelsite*. For insulation for electrical conductors.

ISSUED FEBRUARY 20, 1912.

1,017,732. Tire. F. E. Blaisdell, Philadelphia, Pa.
1,017,764. Wheel tire. P. M. Kemter, and A. W. Hentschel, West New York, N. J.
1,017,775. Hose coupling. E. Le Breton, Cleveland, Ohio.
1,017,809. Puncture closure for pneumatic tires and the like. R. Sampson, Montreal, Quebec, Canada.
1,017,814. Resilient tire. S. S. Scott, Chicago, Ill.
1,017,895. Spring wheel. G. H. Langton, and J. M. Kellerman, assignors to Auto Air Cushion Wheel Co., both of Los Angeles, Cal.
1,017,909. Traction and nonskid device. J. W. Reid, New York.
1,017,919. Spring wheel. S. R. Sanders, assignor of one-half to C. C. Grosshans, both of Aurora, Neb.
1,017,956. Tire setting tool. J. F. Carter, Wadley, Ala.
1,017,961. Antiskidding device. H. A. Fisk, Clinton, Mich.
1,017,966. Hose nozzle. H. F. Goetz, assignor to Waterbury Manufacturing Co., both of Waterbury, Conn.
1,017,980. Elastic tire. J. Lazarus, Boston, Mass.
1,017,988. Vehicle wheel with elastic spokes. H. Munk, Berlin, Germany.
1,018,006. Resilient tire. M. C. Rogers, Williams, Cal.
1,018,027. Resilient tire for wheels of motor vehicles, etc. H. M. Bagdigian, Worcester, Mass.
1,018,049. Resilient tire. M. Hanford, and D. L. Taylor, Malden, Mass.
1,018,088. Wheel. A. J. Swing, assignor to The Auto-Spring Wheel Co., both of Cincinnati, Ohio.
1,018,179. Link for cross chains of antiskid devices. F. A. Fox, Brooklyn, N. Y.
1,018,185. Tire case for automobiles. L. Grimm, Pittsburgh, Pa.
1,018,206. Tire chain and guard. O. J. Mikkelson, Ferryville, Wis.
1,018,238. Detachable rim for pneumatic tires. P. E. Doolittle, Ontario, Canada.
1,018,259. Spring wheel. W. T. Murray, Baldwin, Kans.
1,018,288. Holder for erasers. H. H. Yelf, Portsmouth, England.
1,018,307. Resilient wheel. J. W. Enright, New Orleans, La.
1,018,310. Hose nozzle. S. Frey, assignor of one-half to S. K. Elliott, both of Los Angeles, Cal.
1,018,385. Varnish. L. H. Baekeland, Yonkers, N. Y.

Trade Marks.

60,025. The O. K. Manufacturing Co., Syracuse, N. Y. The initials *O. K.* For erasers.

ISSUED FEBRUARY 27, 1912.

1,018,454. Tire. W. I. Twombly, assignor to Twombly Motors Co., both of New York.
1,018,467. Automobile wheel. A. R. Wylie and J. G. Wright, Big Spring, Texas.
1,018,589. Process of extracting wax from the candelilla plant. B. Y. Sharp, Uvalde, Texas.
1,018,626. Process of manufacturing antislipping tires for motors and other vehicles. A. Michelin, Paris, France.
1,018,652. Shoe retainer. J. A. Drechsler, Hillsdale, Mich.
1,018,708. Shoe protector. J. R. Hetrick, Lompoc, Cal.
1,018,735. Resilient tire. F. Zimmermann, assignor to Francis Keil & Son, both of New York.
1,018,764. Hose rack. J. M. Howard, Washington, D. C.
1,018,774. Vehicle wheel. I. Pascal, Montreal, Quebec, Canada.
1,018,814. Vehicle Tire. H. H. Durr, Springfield, Ohio.
1,018,831. Nipple cover. C. W. Ladley, Ingram, Pa.
1,018,833. Convertible motor. J. C. Lincoln, East Cleveland, Ohio.
1,018,861. Brushing means for disk records for phonographs. F. W. Wood, Los Angeles, Cal.
1,018,871. Door stop. J. W. Buoy, Eugene, Ore.
1,018,876. Sight for firearms. F. C. Chadwick, assignor to Savage Arms Co., both of Utica, N. Y.
1,018,886. Printing wheel and ink fountains. E. W. Dodge, Augusta, Ga.
1,018,895. Tire. E. H. Freas, Philadelphia, Pa.
1,018,934. Electric light switch. C. P. Smith, Oak Park, Ill.
1,019,000. Hose coupling. S. S. Watson, Colegrove, assignor to C. F. Schwickert—both of Los Angeles, Cal.

Trade Marks.

59,353. Eberhard Faber, West New Brighton, N. Y. The initial *F* enclosed in a diamond shape. For rubber erasers.
60,350. Michelin Tire Co., Milltown, N. J. A photograph of tires within a ring. For pneumatic tires for automobiles.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the application, which in the case of these listed below was in 1911.
**Denotes Patents for American Inventions.*

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, FEBRUARY 7, 1912.]

23,573. Use of Bakelite in manufacturing glucose. W. P. Cohoe, 148 Van Horne Street, Toronto, Canada.
23,583. Rubber washers in bottle stoppers. D. Hurst, Cumbria, Malborough Road, Chiswick, and H. K. Bridger, 5 John street, Adelphi —both in London.
23,619. Table ball game with rubber band. H. Hargreaves, Grosvenor Terrace, Limefield, Bury, and J. N. Kay, Briar House, Bury Old Road, Heywood—both in Lancashire.
*23,657. Vehicle wheels with rubber tires. O. Treier, 611 Amsterdam Avenue, New York, U. S. A.
23,689. Inflated rubber cylinder for deadening landing shocks of balloons. C. Labro, 13 Rue de Dunkerque, Paris.
23,694. Elastic connections for cardboard boxes. M. Cheeraerdts, 62 Rue de la Croix de Fer, Brussels.
23,727. Treating India-rubber sheets, etc. C. J. Beaver, Holme Lea, Ashley Road, Hale, and E. A. Claremont, Broom Cottage, High Leigh —both in Cheshire.
*23,762. Corrugated rubber covers for tires. D. Rawstron, 602 Harvester Bldg., Chicago, U. S. A.
23,787. Use of rubber in stuffing box packing. G. W. Beldam, Boston Lodge, Ealing, London.
23,814. Use of rubber in vehicle tires. R. C. Wilford, The Rectory, Garforth, Leeds.

23,815. Improvements in wheel tires. C. H. Southall, 7 Vickars Avenue, Kirkstall, near Leeds.

23,865. Instrument for tapping rubber trees. R. Fyffe, Botanical Gardens, Entebbe, Uganda, British East Africa.

23,859. Valves. Dental Mfg. Co., Alston House, Newman Street, and H. Phillips, 70 Alexandra Road, Wimbledon—both in London.

23,873. Rubber tire bodies and covers. G. E. Heyl, 85 Gracechurch Street, London.

23,913. Elastic tire bodies and covers. Soc. Comptoir Financier Français, 43 Rue de Richelieu, Paris.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, February 14, 1912.]

24,110. Use of rubber in metal boxes. H. Talbot, 158 East Dulwich Grove, Dulwich, London.

*24,129. Hard rubber treads for tires. C. H. Genth, 2823 North 12th Street, Philadelphia, U. S. A.

24,147. Improvements in smoke helmets. H. & B. Drager, 53 Moislinger Allee, Lubeck, Germany.

24,160. Flexible beer pipes. F. W. Schroeder, 54 Upper Kennington Lane, London.

24,280. Jackets and covers of tires. J. H. Messenger, 36 Beaumont Street, Portland Place, London.

24,300. Improvements in pneumatic tires. J. C. Barker, 45 Albion Street, Leeds.

24,325. Apparatus for coagulating latex by smoke. Bertrams, Ltd., St. Katherine's Works, Sciennes, R. F. Gillespie, 35 Mentone Terrace, and P. M. Matthew, Leith Walk—all in Edinburgh.

24,344. Rubber buffers in road vehicles. Daimler Motor Co., and F. M. Charles, Daimler Works, Coventry.

*24,358. Appliance for cleaning lavatory basins. L. O. Howell, 1613 North Columbia Street, Philadelphia, U. S. A.

24,383. Improvements in tire jackets and covers. J. Russell, 4 Westgate Road, Newcastle-on-Tyne.

24,387. Tire attachments. K. Hindley, Turner House, Ringwood, Hampshire.

24,546. Rubber horseshoes. W. Bonson, 11 Stamford New Road, Altrincham, Cheshire.

24,572. Detachable attachment to tires. W. H. Brailey, 21 Landsdowne Place, Hove, Sussex.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, February 21, 1912.]

24,592. Inflation of tires. T. D. Kelly and M. K. Kelly, 9 Avenue Road, Southend-on-Sea.

24,595. Sole and heel protectors. J. H. Hammond, 51 Arundel Street, Leicester.

24,672. Improvements in rubber tires. J. Brown, Market Square, Auckland, New Zealand.

24,727. Improvements in tires. E. Pass, Station Works, Denton, near Manchester.

24,733. Cushioning devices for devices for boots. W. H. Hansel, 61 Church Street, Cromer, Norfolk.

24,738. Molding rubber tires. G. J. Owens, 15 Montpelier, Edinburgh.

24,790. India rubber substitutes. F. E. Matthews and E. H. Strange, 7 Staple Inn, London.

24,932. Cushions for tires. R. Bill, Trent Vale, Stoke-on-Trent, and H. Silvester, 59 Liverpool Road, Newcastle, Staffordshire.

24,975. Trimming rubber boot pads. O. E. Gunton, St. James Street, Leicester, and G. H. Hickson, Rosedene, Austin avenue, Stockton-on-Tees.

25,057. Tread ring of hard rubber. G. L. Tweedale, Prospect Works, Lomax Street, Rochdale, J. Lithgow, 28 Brierley Street, Bury, and J. Rigg, Prospect Works, Lomax Street, Rochdale—all in Lancashire.

25,071. Use of rubber in compound fabrics. W. Leuthaus, and H. Munk, 50 Kurfurstendamm, Berlin, Germany.

25,082. Vehicle wheels. S. A. Currin, 29 Marsh Street, Bristol.

25,087. Artificial caoutchouc. G. Reynaud, 5 Rue Salneuve, Paris.

25,120. Use of rubber for motor car mattings. G. Hookham, 7 New Bartholomew Street, Birmingham.

25,137. Tire attachment to rims. J. Cryer, 2 Well Street, Falcon Square, London, and J. Webster, Edgwick Mill, Paradise, Foleshill, Coventry.

25,153. Improvements in cycle pedals. H. S. Yoxall, and C. W. Thorneycroft, Oliver Street, Works, Birmingham.

25,168. Improvements in tread bands. A. J. Smith, 210 Venner Road, Sydenham, London.

25,201. Artificial caoutchouc. G. Reynaud, 5 Rue Salneuve, Paris.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, February 28, 1912.]

25,265. Improvements in boot heel. M. Saitzew, 9 Tschernichevsky Pereulok, Moscow, Russia.

25,286. Rubber draft excluders. W. Sommer, 70 Chancery Lane, London.

25,298. Use of Balata in tires. B. Abeil, and E. Abeil, Maurs-du-Cantal, Cantal, France.

25,302. Tire attachments to rims. R. W. H. Rodney, Orchard Street, St. Augustine's, Bristol.

25,307. Molding waste rubber. Millwall Rubber Co., The White City, Harpenden, Hertfordshire.

25,308. Apparatus for treating powdered vulcanized rubber. Sir C. Lawes-Wittewronge, Rothamsted, Harpenden, Hertfordshire.

25,317. Resilient tread blocks. R. Rhone, 4 Rue Castellane, Paris.

25,345. Stuffing boxes. G. Hurn, 51 Stromstrasse, Berlin, Germany.

25,400. Plastic rubber substitutes. H. Timpe, 125 Weesperzyde, Amsterdam, and J. G. Jurgens, 3 Vassausingel, Vymegue, Holland.

25,412. Rubber rings in valves. F. H. Brook, 11 Queen Victoria Street, London.

25,451. Rubber tips for walking sticks. R. A. Moxhay, 77 Chapman Road, Victoria Park, London.

25,458. Rubber bands for umbrellas. M. Izbicki, The White House, Heathhurst Road, Sanderstead, and N. Cattaneo, 9 Royal Mansions, London Road, West Croydon—both in Surrey.

25,475. Cushions for cycles. C. H. Stevens, 204 Worple Road, Wimbledon, London.

25,477. Necktie retainers. H. W. T. de l'Isle, 58 Tyrwhitt Road, Brockley, Kent, and A. D. Cooper, 19 Chilworth Street, Paddington, London.

25,524. Rubber balls. Eccles Rubber Works and F. H. Smith, Monton Road, Eccles, Lancashire.

25,573. Coagulation of latex. G. B. Livingston, 68 Gordon Street, and W. D. Cairney, 116 Hope Street—both in Glasgow.

25,624. Inflating tires. F. C. Poulton, 7 Highfield Drive, Monton, near Manchester.

25,641. Heel protectors. W. L. Daucutt, 13 High Street, South East Ham, London.

25,660. Tire jackets and covers. J. E. Alkin, Witherley House, Atherstone, Warwickshire.

25,717. Garden syringes. A. H. Purser, 92 Hatton Garden, London.

25,743. Walking stick seats. C. W. Hudson, 10 Ashchurch Park Villas, Ravenscourt Park, and W. A. Brigg, 23 St. James' Street—both in London.

25,845. Rubber springs. P. Prache, 17 Avenue Niel, Paris.

25,850. Caoutchouc substitutes. Farbenfabriken Vorm. F. Bayer & Co., Elberfeld, Germany.

THE FRENCH REPUBLIC.

PATENTS ISSUED (with Dates of Application).

431,488 (June 22, 1911). J. A. Anglade. Vehicle tires.

431,500 (September 13, 1910). H. G. Hugon. Counter blocks of rubber for vehicle tires.

431,528 (June 23, 1911). G. Litoff. Filled tires for all kinds of vehicles.

431,692 (May 17). Leduc, Heitz & Co. Preparation of fabrics for dirigible aeroplanes.

431,879 (July 7). J. W. Driscoll. Improvements in pneumatic tires for vehicles.

431,911 (May 24). F. C. Roberts. Filled rubber tires.

432,076 (July 8). S. Berg. Sectional pneumatic tires.

432,058 (July 8.) G. Rose. Improvements in valcanizing appliances for repairing pneumatic tires.

431,961 (July 5). Toledo Computing Scale Company. Vulcanization of pneumatic tires.

431,966 (September 23, 1910). J. Dybowski. Separation of rubber and resins, combined in various raw materials.

432,232 (June 10). F. Rose and A. Rae. Improvements in road vehicle tires.

432,294 (October 1, 1910). L. & A. Emery. Antiskid protection for pneumatic tires.

432,318 (July 18, 1911). K. A. Schaumann. Elastic tire.

432,179 (July 12, 1911). A. Hachler. Process for giving firmness to softened hollow rubber balls.

432,392 (July 20). R. Latour & A. Capelle. Composite cover for pneumatic tires.

432,399 (July 20). G. G. Johnson. Improvements in the preparation and application of vulcanized leather, to tires, heels, etc.

432,489 (July 22). E. Aimond. Filled auto skid tire.

432,513 (July 24). P. Pieri. Wheel with elastic tire.

432,563 (July 25). W. H. Hoopers. Elastic tire.

432,818 (July 29). M. W. Fink & A. K. Kobiolki. Improvements in the manufacture of pneumatic tires and driving belts, golf balls, divers' clothing, and other articles wholly or partly of rubber.

432,875 (August 2). F. Sully. Elastic vehicle tires.

433,274 (June 16). G. Geffroy. Pneumatic wheel with inner tire and rigid protective tread.

433,295 (July 19). G. Allié. Elastic vehicle tire.

[NOTE.—Printed copies of specifications of French patents can be obtained from R. Robet, Ingénieur-Conseil, 16 avenue de Villier, Paris, at 50 cents each, postpaid.]

THE GERMAN EMPIRE.

PATENTS ISSUED (with dates of validity).

244,289 (from April 7, 1911). Lothar Schumann, Vordamm, Brandenburg. Spring wheels with elastic tires.

244,079 (from March 30, 1911). Joseph François Staub, Paris. Removal of pneumatic tires from bicycle wheels.

244,359 (from July 9, 1910). Emile Lapisse, Arcueil, France. Manufacture of felt articles impregnated with rubber.

244,470 (from March 10, 1911). W. M. Callender, Beauregard, Guernsey. Production of rubber ferments from the latex of rubber plants.

244,784 (from September 25, 1910). W. Müller, Simonstrasse 13, Elberfeld. Machine for trituration of vulcanized rubber and for sifting the ground product by a current of air.

244,712 (from June 1, 1911). H. P. C. G. Debauge, Paris. Process for purification of rubber.

THE KINGDOM OF BELGIUM.

(PATENTS PUBLISHED.)

239,860 (1912). F. E. Matthews and E. H. Strange, 7 Staple Inn, London. Improvements in manufacture of synthetic rubber.

240,077 (1912). E. Maass, Schoeneberg, Germany. Extraction of rubber from latex and from isoprene, etc.

239,963 (1912). H. P. C. G. Debauge, Paris. Regeneration of vulcanized rubber.

240,657 (1912). The Spirilla Company, Meadville, U. S. A. Appliance for exhibiting elastic objects and displaying their elasticity.

240,505 (1912). L. Liais, Paris. Improvements in rubberized fabrics for tire covers.

240,248 (1912). A. Delanney, Brugelette (Belgium). Rubber tips for chair feet.

Review of the Crude Rubber Market.

THE London rubber auction of February 27, of which only cable reports were to hand at date of last report, disposed of the large quantity of 865 tons without any perceptible decline. This fact has been quoted as illustrating the strength of the demand for consumption, which, it has been stated, could have absorbed even the whole of the arrivals since the previous auction, representing about 1,100 tons. American buyers' operations are said to have been large on this occasion.

Based on this situation, and on the inscription sale at Antwerp of 500 tons at full rates, the price of fine hard Pará, which had been for a week about 4s. 7½d., entered on March 4 upon a steady gradual upward movement, reaching 5s. 2d. by March 27. By the date of the fortnightly auction of March 12, the price had improved to 4s. 10½d., in sympathy with which movement the sale displayed on the average an advance of fourpence on the rates of the previous auction. The reduction of nearly half in the quantity offered (483 instead of 865 tons) tended to impart strength to the market and to stimulate buying.

The result of the sale of the 12th was calculated to favor the advance already in progress in fine hard Pará, which has since then improved from 4s. 10½d. to 5s. 2d. at time of writing. Whether this speculative advance will be maintained, in view of the light biddings at the sale of the 26th, and the consequent failure to establish an advance reflecting the latest movements of the open market, is being watched with interest. The opinion has been expressed that consumers are apparently not willing to follow the upward movement of the London market.

NEW YORK QUOTATIONS.

FOLLOWING are the quotations at New York for Pará grades, one year ago, one month ago and March 30—the current date.

PARA.	Apr. 1, '11.	Mar. 1, '12.	Mar. 30, '12.
Islands, fine; new	130@131	107@108	117@118
Islands, fine, old	none here	108@109	119@120
Upriver, fine, new	139@140	109@110	122@122
Upriver, fine, old	144@145	112@113	124@125
Islands, coarse, new	62@ 63	62@ 63	67@ 68
Islands, coarse, old	none here	none here	none here
Upriver, coarse, new	108@109	92@ 93	98½@ 99
Upriver, coarse, old	110@111	94@ 95	none here
Cametá	79@ 80	65@ 66	72@ 73
Caucho (Peruvian) ball	108@109	93@ 94	98@ 99
Caucho (Peruvian) sheet	none here	none here	none here
PLANTATION PARA.			
Fine smoked sheet	159@160	130@131	139@140
Fine pale crepe	145@146	129@130	138@139
Fine sheets and biscuits	142@143	125@126	136@137
CENTRALS.			
Esmeralda, sausage	105@106	91@ 92	97@ 98
Guayaquil, strip	none here	none here	none here
Nicaragua, scrap	103@104	90@ 91	96@ 97
Panama	none here	none here	none here
Mexican, scrap	103@104	89@ 90	95@ 96
Mexican, slab	62@ 63	none here	none here
Mangabeira, sheet	68@ 69	68@ 69	67@ 68
Guayule	64@ 65	60@ 61	69@ 70
Balata, sheet	93@—	89@ 90	90@ 91
Balata, block	67@ 68	55@ 56	62@ 63
AFRICAN.			
Lopori ball, prime	123@124	109@110	122@123
Lopori, strip, prime	none here	none here	none here
Aruwimi	122@123	105@106	none here
Upper Congo ball, red	125@126	110@111	none here
Ikelemba	none here	none here	none here
Sierra Leone, 1st quality	122@123	98@ 99	109@110
Massai, red	122@123	101@102	111@112
Soudan, Niggers	none here	none here	none here
Cameroon ball	79@ 80	70@ 71	91@ 92
Benguela	79@ 80	71@ 72	78@ 79
Madagascar, pinky	100@101	none here	none here
Accra, flake	40@ 41	27@ 28	28@ 29
EAST INDIAN.			
Assam	104@105	none here	none here
Pontianak	7@7¼	5¾@—	6¾@—
Borneo	none here	none here	none here

Late Pará cables quote:

Per Kilo.		Per Kilo.	
Islands fine	5$300	Upriver, coarse	5$300
Islands, coarse	2$850	Upriver, fine	6$300
		Exchange	16¼*d.*

Latest Manáos advices:

Upriver, fine	6$550	Exchange	16 7/32*d*
Upriver, coarse	4$950		

New York.

In regard to the financial situation, Albert B. Beers (broker in crude rubber and commercial paper, No. 68 William street, New York) advises as follows: "During March there has been a good general demand for paper, with rates towards the latter part of the month rather higher than previously, the best rubber names ruling at 4½@5 per cent., and those not so well known, 5½@5¾ per cent."

NEW YORK PRICES FOR FEBRUARY (NEW RUBBER).

	1912.	1911.	1910.
Upriver, fine	$1.07@1.11	$1.28@1.68	$1.87@2.10
Upriver, coarse	.92@ .94	.98@1.20	1.15@1.28
Islands, fine	1.05@1.08	1.15@1.56	1.81@2.04
Islands, coarse	.62@ .65	.65@ .90	.75@ .89
Cametá	.65@ .67	.68@ .95	85.@ .98

African Rubbers.

NEW YORK STOCKS (IN TONS).

February 1, 1911	115	September 1, 1911	112
March 1	111	October 1	67
April 1	98	November 1	45
May 1	98	December 1	60
June 1	90	January 1, 1912	58
July 1	90	February 1	150
August 1	90	March 1	90

Para.

R. O. AHLERS & Co. report [March 4]:

Market has been steady and nearly all lots coming from the interior have been bought by exporters for shipment to New York. By the last two steamers to New York were shipped more than 1,594 tons. There is no doubt that the crop is larger than the crop of last year.

R. O. AHLERS & Co. report [March 11]:

Market has advanced steadily in accordance with quotations from consuming centers, and Rs 6$000 kilo (about $2) has been paid for Upriver fine, which price had not been reached since about 10 months ago, although exchange keeps steady and the continual news of unrest in the South seems to have no influence on exchange. The crop will be larger than last year's, but the demand, specially from the States, seems to be equal to arrivals.

Rubber Receipts at Manaos.

	December.			January.		
From—	1911.	1910.	1909.	1912.	1911.	1910.
Rio Purús-Acre ...*tons*	694	634	566	2,867	2,162	2,993
Rio Madeira	467	277	480	760	490	489
Rio Juruá	651	704	580	554	1,024	1,036
Rio Javary-Iquitos	189	455	334	558	237	609
Rio Solimões	170	252	248	149	147	185
Rio Negro	230	64	173	2	38	174
Total	2,401	2,386	2,381	4,890	4,098	5,486
For Shipment From						
Manáos	1,942	1,974	2,038	2,738	2,489	3,772
Pará	459	412	343	2,152	1,609	1,714
Total	2,401	2,386	2,381	4,890	4,098	5,486

Statistics of Para Rubber (Excluding Caucho).

	New York. Fine and Medium.	Coarse.	Total 1912.	Total 1911.	Total 1910.
Stocks, January 31...*tons*	260	45 =	305	242	232
Arrivals, February.....	1,689	634 =	2,323	1,202	2,005
Aggregating	1,949	679 =	2,628	1,444	2,237
Deliveries, February.....	1,697	652 =	2,349	1,279	2,051
Stocks, February 29...	252	27 =	279	165	186

	Para. 1912.	1911.	1910.	England. 1912.	1911.	1910.
Stocks, January 31...*tons*	3,370	1,765	1,170	1,050	1,225	345
Arrivals, February.....	3,985	4,695	3,660	972	1,071	1,215
Aggregating	7,355	6,460	4,830	2,022	2,296	1,560
Deliveries, February....	4,115	3,215	4,365	967	911	1,050
Stocks, February 29...	3,240	3,245	465	1,055	1,385	510

	1912.	1911.	1910.
World's visible supply, February 29...*tons*	6,383	6,800	4,221
Pará receipts, July 1 to February 29.....	22,650	21,715	23,130
Pará receipts of caucho, same dates.....	3,400	4,080	3,910
Afloat from Pará to United States, Feb. 29	584	665	1,980
Afloat from Pará to Europe, February 29.	1,225	1,340	1,170

Rubber Stock at Para.

Stock for January 31 showed an increase caused by heavier arrivals, while that of February 29 shows a slight decrease.

January 31, 1911.....*tons*	2,085	August 31, 1911.....*tons*	3,450
February 28	3,787	September 30	3,102
March 31	4,214	October 31	3,320
April 30	5,104	November 30	3,050
May 31	5,350	December 31	2,675
June 30	4,545	January 31, 1912.....	3,370
July 31	3,884	February 29	3,240

Liverpool.

William Wright & Co. [March 1]:

Fine Pará.—The market has been firm with only slight fluctuations. Sellers, in view of the active demand, especially for plantation, have operated sparingly. Manufacturers are hesitating; we believe they are wishful to buy, but are afraid of some phenomenal decline, of which there is no evidence. We look for a continuance of steady prices, with moderate fluctuations. America still continues to absorb stock from this market in quantity, and, in spite of stocks, very little spot rubber is obtainable. Closing value: Hard Fine, *4s. 7½d.* [$1.125]; Island, *4s. 7d.* [$1.114].

WEEKLY MOVEMENT OF LONDON PRICES.

[In Shillings and Pence Per Pound.]

July, 7, 1911	4/2½	November 17, 1911	4/3
July 14	4/5½	November 24	4/3½
July 21	4/7	December 1	4/4½
July 28	4/8	December 8	4/5½
August 4	4/7½	December 15	4/4½
August 11	4/7½	December 22	4/4
August 18	4/7½	December 29	4/3½
August 25	4/10½	January 5, 1912	4/4½
September 1	4/8½	January 12	4/5½
September 8	4/9	January 19	4/5½
September 15	5/	January 26	4/8
September 22	4/10½	February 2	4/7
September 29	4/8	February 9	4/6½
October 6	4/7	February 16	4/6¾
October 13	4/5	February 23	4/7½
October 20	4/6½	March 1	4/7½
October 27	4/4	March 8	4/9
November 3	4/3	March 15	4/10½
November 10	4/4½	March 22	5/2½

IMPORTS FROM PARA AT NEW YORK.

[*The Figures Indicate Weight in Pounds.*]

March 7.—By the steamer *Frances*, from Manáos and Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
Arnold & Zeiss	150,400	64,000	238,800	43,700=	496,900
General Rubber Co.	189,300	44,600	92,200	60,300=	386,400
New York Commercial Co..	110,600	51,200	89,100	39,700=	290,600
Meyer & Brown	105,200	16,800	36,200	48,100=	206,300
Henderson & Korn	6,000	700	17,900	.....=	24,600
Hagemeyer & Brunn	.....	.....	7,200	.....=	7,200
Total	561,500	177,300	481,400	191,800=	1,412,000

March 21.—By the steamer *Benedict*, from Manáos and Pará:

Arnold & Zeiss	315,600	116,900	271,200	144,500=	848,200
New York Commercial Co..	152,400	48,900	147,800	137,400=	486,500
General Rubber Co.	150,700	47,600	81,500	3,900=	283,700
Meyer & Brown	42,500	10,400	53,400	48,700=	155,000
G. Amsinck & Co.	10,400	.....	16,500	.....=	26,900
Henderson & Korn	13,200	1,400	8,600	5,100=	28,300
De Lagotellerie & Co.	8,200	3,600	9,200	.....=	21,000
Hagemeyer & Brunn	.....	.....	11,900	.....=	11,900
Total	693,000	228,800	600,100	339,600=	1,861,500

March 25.—By the steamer *Christopher*, from Manáos and Pará:

Arnold & Zeiss	244,300	109,300	248,100	87,100=	688,800
New York Commercial Co..	193,900	37,600	189,700	169,600=	590,800
General Rubber Co.	165,700	45,700	74,900	4,000=	290,300
Meyer & Brown	83,400	15,500	76,000	54,200=	229,100
Henderson & Korn	.....	.....	.....	70,000=	70,000
De Lagotellerie & Co.	13,200	1,400	9,900	.....=	24,500
Hagemeyer & Brunn	1,100	.....	11,900	.....=	13,000
Total	701,600	209,500	610,500	384,900=	1,906,500

PARA RUBBER VIA EUROPE.

Pounds.

February 26.—By the *Celtic*=Liverpool:
N. Y. Commercial Co. (Fine).. 34,000

February 26.—By the *Cevic*=Liverpool:
N. Y. Commercial Co. (Fine).. 56,000

February 28.—By the *Pennsylvania*=Hamburg:
Henderson & Korn (Caucho).. 11,500

February 28.—By the *Alliança*=Mollendo:
W. R. Grace & Co. (Caucho).. 7,000

February 28.—By the *Amerika*=Hamburg:

Ed. Maurer (Fine)	7,000	
Wallace L. Gough Co. (Fine)..	5,000	
Raw Products Co. (Coarse)....	3,500	15,500

March 4.—By the *Campania*=Liverpool:

N. Y. Commercial Co. (Fine)..	100,000	
General Rubber Co. (Fine)....	25,000	
Robinson & Co. (Fine).....	11,000	136,000

March 7.—By the *President Lincoln*=Hamburg:

N. Y. Commercial Co. (Fine)..	6,000	
Meyer & Brown (Fine).....	2,000	8,000

March 7.—By the *Crown of Navarre*=Bolivar:

Yglesias, Lobo & Co. (Fine)....	18,500	
Yglesias, Lobo & Co. (Coarse)..	3,000	21,500

March 11.—By the *Baltic*=Liverpool:

N. Y. Commercial Co. (Fine)..	30,000	
L. Blitz (Fine).....	2,000	32,000

March 19.—By the *Cymric*=Liverpool:
N. Y. Commercial Co. (Fine).. 175,000

March 20.—By the *Waldersee*=Hamburg:
Meyer & Brown (Fine)..... 3,500

March 21.—By the *Winifredian*=Liverpool:
N. Y. Commercial Co. (Fine).. 34,000

March 25.—By the *Campania*=Liverpool:

Raw Products Co. (Fine)....	4,500	
Arnold & Zeiss (Caucho).....	34,000	38,500

OTHER NEW YORK ARRIVALS.

CENTRALS.

[*This sign, in connection with imports of Centrals, denotes Guayule rubber.]

Pounds.

February 23.—By the *Comus*=New Orleans:

Manhattan Rubber Mfg. Co....	8,000	
Robinson & Co.	6,000	
Eggers & Heinlein	3,500	17,500

February 27.—By *El Occidente*=Galveston:
Charles T. Wilson..... *9,000

February 28.—By the *Pennsylvania*=Hamburg:

New York Commercial Co.....	*50,000	
Henderson & Korn	4,500	54,500

February 28.—By the *Belle*=Colombia:

A. Held	11,000	
R. Castillo & Co.	3,500	
Isaac Brandon & Bros.	3,000	
Maitland, Coppell & Co.	3,000	
G. Amsinck & Co.	2,000	
Caballero & Blanco	1,500	
Wessels, Kulenkampff & Co.	1,000	
Gillespie Bros. & Co.	1,000	26,000

February 29.—By the *Silvia*=Colon:

G. Amsinck & Co.	5,500	
Andean Trading Co.	5,000	10,500

March 1.—By the *New York*=London:
Arnold & Zeiss..... 11,500

March 1.—By the *Orotava*=Colombia:

W. R. Grace & Co.	11,500	
Isaac Brandon & Bros.	5,000	
G. Amsinck & Co.	4,000	
A. M. Capen's Sons.	3,500	
Roldau & Van Sickle.	2,000	
Maitland Coppell & Co.	1,500	
J. Sambrada & Co.	1,000	28,500

March 1.—By the *Proteus*=New Orleans: ..

Manhattan Rubber Mfg. Co....	8,000	
Robinson & Co.	2,500	
Meyer & Brown.	2,000	
Eggers & Heinlein.	1,500	14,000

March 4.— By the *Albingia*=Colombia:

Maitland, Coppell & Co.	11,000	
P. Ebling & Co.	1,500	
Caballero & Blanco.	1,000	13,500

March 4.—By the *Mexico*=Vera Cruz:

J. W. Wilson & Co.	7,500	
Harburger & Stack.	2,500	
Diamond Rubber Co.	2,500	
Laguna Export Co.	2,000	
Ed. Maurer.	2,000	
Laurence Johnson & Co.	2,000	
H. Marquard & Co.	1,500	20,000

MARCH 6.—By the *Prinz Eitel Friedrich*=Colon:

G. Amsinck & Co.	10,000	
United Fruit Co.	1,500	
Harburger & Stack	1,000	
Isaac Brandon & Bros.	1,000	13,500

MARCH 6.—By the *El Mundo*=Galveston:

Charles T. Wilson		*10,000

MARCH 6.—By the *Creole*=New Orleans:

Eggers & Heinlein	2,500	
Meyer & Brown	2,000	
T. N. Morgan & Co.	1,500	
Robinson & Co.	1,500	
Wessels, Kulenkampff & Co.	2,000	9,500

MARCH 6.—By the *Bohemian*=Liverpool:

Adolph Hirsch & Co.		22,500

MARCH 7.—By the *Camaguey*=Tampico:

New York Commercial Co.	*110,000	
Continental-Mexican Rubber Co.	*77,000	
Arnold & Zeiss	*65,000	
Ed. Maurer	*40,000	
For Europe	*75,000	*367,000

MARCH 7.—By the *Colon*=Colon:

G. Amsinck & Co.	24,500	
Mecke & Co.	2,500	
American Trading Co.	2,500	
Wessels, Kulenkampff & Co.	2,000	
Lanman & Kemp	2,000	
Dumarest Bros. & Co.	2,000	
Charles E. Griffin	1,500	
J. J. Julia & Co.	1,500	38,500

MARCH 7.—By the *President Lincoln*=Hamburg:

Ed. Maurer		*30,000

MARCH 8.—By the *Voltaire*=Bahia:

J. H. Rossbach & Bros.		67,000

MARCH 8.—By the *Antilla*=Tampico:

Ed. Maurer	*90,000	
For Europe	*90,000	*180,000

MARCH 9.—By the *Esperanza*=Frontera:

E. Steiger & Co.	6,000	
Hermann Kluge	4,000	
Maitland, Coppell & Co.	3,000	
Harburger & Stack	3,000	
E. Nelson Tibbals & Co.	3,000	
Silva Bussenius & Co.	1,500	
For Europe	11,500	32,000

MARCH 11.—By the *Baltic*=Liverpool:

Henderson & Korn		5,500

MARCH 12.—By the *Momus*=New Orleans:

Manhattan Rubber Mfg. Co.	3,500	
Eggers & Heinlein	3,000	
G. Amsinck & Co.	2,500	
Robinson & Co.	1,000	10,000

MARCH 12.—By the *Santiago*=Tampico:

Ed. Maurer	*70,000	
Arnold & Zeiss	*45,000	
New York Commercial Co.	*34,000	
Charles T. Wilson	*5,000	
For Europe	*45,000	*199,000

MARCH 13.—By the *Magdalena*=Colombia:

J. Sambrada & Co.	4,000	
Mecke & Co.	4,000	
G. Amsinck & Co.	2,000	
Caballero & Blanco	1,000	
Isaac Brandon & Bros.	1,000	
Gillespie Bros. & Co.	1,000	13,000

MARCH 14.—By the *Advance*=Colon:

G. Amsinck & Co.	12,000	
Wessels, Kulenkampff & Co.	4,500	
Piza, Nephews & Co.	2,500	
Nicaragua Trading Co.	2,500	
Silva Bussenius & Co.	1,000	
Meyer Hecht	1,000	23,500

MARCH 16.—By the *Seguranca*=Tampico:

New York Commercial Co.	*70,000	
Ed. Maurer	*65,000	
For Europe	*45,000	*180,000

MARCH 16.—By the *Moro Castle*=Frontera:

Meyer & Brown	3,500	
Harburger & Stack	3,000	
Maitland, Coppell & Co.	2,500	
H. Marquardt & Co.	1,000	
George A. Alden & Co.	1,000	
American Trading Co.	1,000	
Hermann Kluge	1,000	
For Europe	15,000	28,000

MARCH 20.—By the *Prinz August Wilhelm*=Colon:

G. Amsinck & Co.	5,500	
Isaac Brandon & Bros.	3,000	
Andean Trading Co.	2,500	
Dumarest Bros. & Co.	1,500	
Manhattan Rubber Mfg. Co.	1,500	
Suzarte & Whitney	1,000	
Pablo Calvert & Co.	1,000	
R. Fabien & Co.	1,000	
Wessels Kulenkampff & Co.	1,000	
A. Held	1,000	
Caballero & Blanco	1,000	20,000

MARCH 20.—By the *Waldersee*=Hamburg:

Ed. Maurer	*25,000	
New York Commercial Co.	*15,000	*40,000

MARCH 23.—By the *Monterey*=Frontera:

Laurence Johnson & Co.	10,000	
Meyer & Brown	4,500	
E. Steiger & Co.	4,500	
Harburger & Stack	3,500	
E. Nelson Tibbals & Co.	3,000	
General Export Comm. Co.	2,500	
George A. Alden & Co.	2,500	
Silva Bussenius & Co.	2,000	
P. V. Rubio & Co.	1,000	
H. Marquardt & Co.	1,000	
For Europe	7,000	41,500

MARCH 25.—By the *Tennyson*=Bahia:

J. H. Rossbach & Bros.	30,000	
Adolph Hirsch & Co.	15,000	45,000

AFRICAN.

		POUNDS.
FEBRUARY 26.—By the *Celtic*=Liverpool:		
George A. Alden & Co.	35,000	
Robinson & Co.	22,500	
James T. Johnstone	13,500	
Ed. Maurer	11,000	
Raw Products Co.	4,500	86,500
FEBRUARY 26.—By the *Steiermark*=Hamburg:		
Robert Badenhop	30,000	
Rubber Trading Co.	11,000	
Meyer & Brown	9,000	
Wallace L. Gough Co.	7,000	57,000
FEBRUARY 26.—By the *Cevic*=Liverpool:		
George A. Alden & Co.	25,000	
Ed. Maurer	7,000	
Henderson & Korn	5,500	37,500
FEBRUARY 26.—By the *Rochambeau*=Havre:		
Ed. Maurer		80,000
FEBRUARY 26.—By the *Germania*=Lisbon:		
Meyer & Brown	11,500	
Hagemeyer & Brunn	11,500	
Wallace L. Gough Co.	11,000	34,000
FEBRUARY 28.—By the *Pennsylvania*=Hamburg:		
George A. Alden & Co.	120,000	
Ed. Maurer	25,000	
General Rubber Co.	13,500	
James T. Johnstone	11,500	
Henderson & Korn	5,000	
Rubber Trading Co.	7,000	182,000
FEBRUARY 28.—By the *Kroonland*=Antwerp:		
Meyer & Brown	200,000	
Arnold & Zeiss	11,000	211,000
FEBRUARY 28.—By the *Amerika*=Hamburg.		
George A. Alden & Co.	95,000	
Ed. Maurer	25,000	
Arnold & Zeiss	18,000	
James T. Johnstone	8,000	
Wallace L. Gough Co.	8,000	154,000
MARCH 2.—By the *Monadnock*=Lisbon:		
Arnold & Zeiss	67,000	
Meyer & Brown	22,500	
George A. Alden & Co.	11,500	101,000
MARCH 4.—By the *Campania*=Liverpool:		
Ed. Maurer	22,500	
General Rubber Co.	15,000	
Arnold & Zeiss	15,000	
George A. Alden & Co.	7,000	59,500
MARCH 6.—By the *Finland*=Antwerp:		
Arnold & Zeiss	20,000	
Meyer & Brown	13,500	
Robinson & Co.	7,000	
L. Blitz	5,500	
Wallace L. Gough Co.	4,500	50,500
MARCH 6.—By the *Bohemian*=Liverpool:		
Ed. Maurer	56,000	
George A. Alden & Co.	45,000	
Robinson & Co.	15,000	
General Rubber Co.	9,000	
Meyer & Brown	3,500	128,500
MARCH 10.—By the *Baltic*=Liverpool:		
George A. Alden & Co.	22,500	
James T. Johnstone	7,800	
L. Blitz	3,500	33,000
MARCH 9.—By the *President Lincoln*=Hamburg:		
George A. Alden & Co.	30,000	
Ed. Maurer	20,000	
Rubber Trading Co.	11,000	
Meyer & Brown	15,500	
Wallace L. Gough Co.	11,500	
General Rubber Co.	7,000	
J. T. Johnstone	3,500	
Henderson & Korn	4,500	102,000
MARCH 11.—By the *St. Louis*=London:		
George A. Alden & Co.	15,000	
General Rubber Co.	11,000	26,000
MARCH 13.—By the *Carolina*=Havre:		
Meyer & Brown	15,000	
George A. Alden & Co.	3,500	18,500
MARCH 15.—By the *Vaderland*=Antwerp:		
Meyer & Brown	95,000	
General Rubber Co.	70,000	
Arnold & Zeiss	15,000	
L. Blitz	7,000	187,000
MARCH 15.—By the *Niagara*=Havre:		
Arnold & Zeiss	80,000	
Meyer & Brown	45,000	
Ed. Maurer	7,000	132,000
MARCH 18.—By the *Lapland*=Antwerp:		
General Rubber Co.	200,000	
Meyer & Brown	85,000	
George A. Alden & Co.	20,000	305,000
MARCH 18.—By the *Espagne*=Havre:		
George A. Alden & Co.		11,500
MARCH 19.—By the *Cymric*=Liverpool:		
George A. Alden & Co.	50,000	
Robinson & Co.	70,000	
Meyer & Brown	20,000	
General Rubber Co.	13,500	
Henderson & Korn	11,500	
James T. Johnstone	9,000	
Ed. Maurer	5,500	
Robert Badenhop	4,500	184,000
MARCH 20.—By the *Potsdam*=Rotterdam:		
General Rubber Co.		22,500
MARCH 20.—By the *Waldersee*=Hamburg:		
George A. Alden & Co.	55,000	
Ed. Maurer	35,000	
General Rubber Co.	13,500	
Arnold & Zeiss	11,000	
Raw Products Co.	5,500	
L. Blitz	5,000	
Meyer & Brown	5,000	130,000
MARCH 25.—By the *Campania*=Liverpool:		
Arnold & Zeiss	11,500	
Rubber Trading Co.	3,500	15,000

EAST INDIAN.

		POUNDS.
FEBRUARY 26.—By the *Celtic*=Liverpool:		
Ed. Maurer		*15,000
FEBRUARY 28.—By the *Minnewaska*=London:		
General Rubber Co.	*225,000	
New York Commercial Co.	*75,000	
Arnold & Zeiss	*45,000	
Robinson & Co.	*11,000	
Wallace L. Gough Co.	*5,500	
In transit	*56,000	
Robinson & Co.	11,500	
Raw Products Co.	8,000	437,000
FEBRUARY 27.—By the *Minnewaska*=London:		
Meyer & Brown		*30,000
MARCH 1.—By the *New York*=London:		
New York Commercial Co.	*56,000	
Arnold & Zeiss	*34,000	
Ed. Maurer	*20,000	
Meyer & Brown	*9,000	*119,000
MARCH 2.—By the *Kennebec*=Singapore:		
Ed. Maurer		*11,500
MARCH 4.—By the *Afghan Prince*=Singapore:		
Ed. Maurer	*27,000	
L. Littlejohn & Co.	*9,000	
New York Commercial Co.	*5,000	
Ed. Maurer	22,500	
Arnold & Zeiss	10,000	
Haebler & Co.	25,000	98,500
MARCH 6.—By the *Finland*=Antwerp:		
Meyer & Brown		*11,000
MARCH 8.—By the *Werdenfels*=Colombo:		
Meyer & Brown	*56,000	
Robert Badenhop	*34,000	
Ed. Maurer	*11,500	
New York Commercial Co.	*11,000	*112,500
MARCH 8.—By the *Oceanic*=London:		
New York Commercial Co.	*90,000	
Arnold & Zeiss	*70,000	
James T. Johnstone	*22,500	
Meyer & Brown	*22,500	
Ed. Maurer	*35,000	
Henderson & Korn	*11,500	
Arnold & Zeiss	2,500	254,000
MARCH 8.—By the *Indrawadi*=Singapore:		
Ed. Maurer	*34,000	
L. Littlejohn & Co.	*22,000	
United Malaysian Rubber Co.	25,000	81,000

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March 9.—By the *Bloemfontein*=Colombo:

Meyer & Brown	*80,000	
Ed. Maurer	*75,000	
Robert Badenhop	*13,500	
G. Amsinck & Co.	*11,500	*180,000

March 11.—By the *St. Louis*=London:

Arnold & Zeiss	*56,000	
New York Commercial Co.	*7,000	
James T. Johnstone	*7,000	
In transit	*30,000	*100,000

March 11.—By the *Colonian*=London:

General Rubber Co.		22,500

March 15.—By the *Falls of Nith*=Colombo:

Meyer & Brown	*56,000	
Robert Badenhop	*11,500	
Arnold & Zeiss	*9,000	*76,500

March 15.—By the *Vaderland*=Antwerp:

Meyer & Brown		*100,000

March 16.—By the *Mesaba*=London:

General Rubber Co.	*220,000	
Arnold & Zeiss	*11,500	
Robinson & Co.	*11,000	
Meyer & Brown	*11,500	*254,000

March 18.—By the *Lapland*=Antwerp:

New York Commercial Co.	*90,000	
Arnold & Zeiss	*5,500	
Meyer & Brown	*1,500	*97,000

March 20.—By the *Olympic*=London:

New York Commercial Co.	*50,000	
In transit	*22,500	*72,500

March 20.—By the *Waldersee*=Hamburg:

Rubber Trading Co.		*7,000

March 20.—By the *Schildturm*=Colombo:

Meyer & Brown	*180,000	
New York Commercial Co.	*45,000	
Robert Badenhop	*25,000	
G. Amsinck & Co.	*9,000	
Ed. Maurer	*7,000	
L. Blitz	*5,000	*271,000

March 21.—By the *Dacre Castle*=Singapore:

Ed Maurer	*34,000	
Wallace L. Gough Co.	*5,000	
New York Commercial Co.	*5,000	
Ed. Maurer	50,000	
United Malayasian Rubber Co.	34,000	128,000

March 21.—By the *Winifredian*=London:

New York Commercial Co.	*70,000	
Meyer & Brown	*25,000	
Ed. Maurer	*90,000	
Arnold & Zeiss	*56,000	
General Rubber Co.	*34,000	
Robinson & Co.	*11,000	
In transit	*56,000	*342,000

March 22.—By the *Atholl*=Singapore:

Ed. Maurer	*45,000	
L. Littlejohn & Co.	*20,000	
Haebler & Co.	*13,500	
Wallace L. Gough Co.	*13,500	
New York Commercial Co.	*9,000	
A. W. Brunn	*3,500	
United Malaysian Rubber Co.	30,000	
Haebler & Co.	20,000	
Arnold & Zeiss	13,500	
Otto Isenstein & Co.	22,500	
L. Littlejohn & Co.	13,500	204,000

GUTTA-JELUTONG.

	Pounds.	
March 2.—By the *Kennebec*=Singapore:		
L. Littlejohn & Co.	225,000	
Wallace L. Gough Co.	150,000	375,000
March 4.—By the *Afghan Prince*=Singapore:		
L. Littlejohn & Co.	300,000	
Haebler & Co.	350,000	
W. R. Russell & Co.	110,000	
Wallace L. Gough Co.	56,000	816,000
March 8.—By the *Indrawadi*=Singapore:		
L. Littlejohn & Co.	650,000	
Wallace L. Gough Co.	220,000	
Haebler & Co.	225,000	
W. R. Russell & Co.	150,000	
George A. Alden & Co.	70,000	1,315,000
March 20.—By the *Potsdam*=Rotterdam:		
L. Littlejohn & Co.	100,000	
Wallace L. Gough Co.	80,000	180,000
March 20.—By the *Waldersee*=Hamburg:		
L. Littlejohn & Co.		75,000
March 21.—By the *Dacre Castle*=Singapore:		
L. Littlejohn & Co.	425,000	
Haebler & Co.	250,000	
Wallace L. Gough Co.	75,000	
George A. Alden & Co.	50,000	800,000
March 22.—By the *Atholl*=Singapore:		
L. Littlejohn & Co.	450,000	
Haebler & Co.	400,000	
Wallace L. Gough Co.	135,000	
W. R. Russell & Co.	75,000	1,060,000

GUTTA-PERCHA.

	Pounds.	
February 28.—By the *Amerika*=Hamburg:		
Robert Soltau & Co.		9,000
March 4.—By the *Afghan Prince*=Singapore:		
Haebler & Co.		45,000
March 7.—By the *President Lincoln*=Hamburg:		
Robert Soltau & Co.		9,000

BALATA.

	Pounds.	
March 7.—By the *Colon*=Colon:		
R. Del Gallego & Co.	2,000	
D. A. De Lima & Co.	1,500	3,500
March 7.—By the *Crown of Navarre*=Trinidad:		
Ed. Maurer	3,500	
Frame & Co.	3,000	6,500
March 13.—By the *Magdelena*=Colon:		
Bartling & DeLeon		5,500
March 20.—By the *Potsdam*=Rotterdam:		
Earle Brothers		5,000
March 20.—By the *Waldersee*=Hamburg:		
Wallace L. Gough Co.	5,000	
R. & J. Dick, Ltd.	13,500	18,500

BOSTON ARRIVALS.

	Pounds.	
February 12.—By the *Indramayo*=Singapore:		
State Rubber Co. (Ceylon)	45,000	
L. Littlejohn & Co. (Gutta-Percha)	35,000	
L. Littlejohn & Co (Jelutong)	700,000	
State Rubber Co. (Jelutong)	170,000	950,000
February 16.—By the *Bulgaria*=Hamburg:		
George A. Alden & Co. (African)		4,500
February 24.—By the *Michigan*=London:		
George A. Alden & Co. (Gutta-Percha)		3,000
February 24.—By the *Kennebec*=Singapore:		
State Rubber Co. (Jelutong)		330,000

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—FEBRUARY.

Imports:	Pounds.	Value.
India-rubber	11,764,589	$9,847,919
Balata	27,295	14,324
Guayule	923,566	415,778
Gutta-percha	8,582	5,931
Gutta-jelutong (Pontianak)	799,709	46,091
Total	13,523,741	$10,330,043
Exports:		
India-rubber	115,865	$91,148
Balata	27,143	14,821
Guayule	.....	.....
Gutta-percha	.....	.....
Reclaimed rubber	129,636	21,105
Rubber scrap, imported	1,828,287	$151,222
Rubber scrap, exported	577,422	65,884

EXPORTS OF INDIA-RUBBER FROM PARA FOR FEBRUARY, 1912, (IN KILOGRAMS).

	NEW YORK.					EUROPE.					
EXPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.	Fine.	Medium.	Coarse.	Caucho.	Total.	TOTAL.
Zarges, Berringer & Co.	246,910	92,521	293,320	66,157	698,908	465,775	7,054	38,757	106,510	618,096	1,317,004
Ad. H. Alden, Ltd.	85,764	27,496	73,816	62,293	249,368	239,565	25,937	99,096	20,742	385,340	634,708
Gordon & Co.	245,227	32,459	110,840	40,345	428,871	16,003	2,074	676	13,993	32,746	461,617
Suárez Hermanos & Co., Ltd.	.....	.....	.....	.....	.....	33,590	1,841	24,996	30,380	90,807	90,807
De Lagotellerie & Co.	5,780	5,270	33,330	.....	44,380	17,170	.....	6,270	6,930	30,370	74,750
R. O. Ahlers & Co.	.....	.....	.....	.....	.....	25,210	1,807	2,563	28,703	58,283	58,283
Pires, Teixeira & Co.	11,730	1,020	20,790	.....	33,540	2,040	170	2,310	.....	4,520	38,060
Nunes Sobrinho & Co.	1,020	.....	1,650	3,630	6,300	15,810	340	1,320	.....	17,470	23,770
Sundries	9,155	195	5,818	3,092	18,260	.....	.....	.....	.....	.....	18,260
Itacoatiara, direct	.....	.....	.....	.....	.....	11,490	1,970	7,243	2,893	23,996	23,996
	605,586	158,961	539,564	175,516	1,479,627	827,053	41,193	183,231	210,151	1,261,628	2,741,255
Manáos, direct	553,966	145,949	231,473	223,215	1,154,603	579,359	78,572	76,463	264,788	999,182	2,153,785
Iquitos, direct	2,457	.....	610	6,967	10,034	68,198	6,420	31,383	125,705	231,706	241,740
Total, February, 1912.	1,162,009	304,910	771,647	405,698	2,644,264	1,474,610	126,185	291,077	600,644	2,492,516	5,136,780
Total, January, 1912.	752,317	112,959	437,915	64,926	1,368,171	1,382,605	180,847	339,253	451,773	2,354,178	3,722,295

MANAOS EXPORTS OF INDIA-RUBBER FOR FEBRUARY, 1912 (IN KILOGRAMS).

	NEW YORK.					EUROPE.					
EXPORTERS—	Fine.	Medium.	Coarse.	Caucho.	Total.	Fine.	Medium.	Coarse.	Caucho.	Total.	TOTAL.
Zarges, Orliger & Co.	182,259	62,081	86,819	32,997	364,156	64,534	665	11,918	116,123	393,240	757,396
Adelbert H. Alden, Ltd.	68,657	50,574	85,095	124,950	429,276	154,787	41,311	46,286	73,937	316,321	745,597
Gordon & Co.	163,618	50,303	70,627	25,397	309,945	72,933	24,960	12,954	68,936	179,783	489,738
De Lagotellerie & Co.	.....	.....	.....	.....	.....	31,135	2,092	2,775	150	36,152	36,152
Sawyer & Co.	.....	.....	.....	.....	.....	21,887	2,863	5,724	.....	30,474	30,474
O. H. Ahlers & Co.	.....	.....	.....	.....	.....	4,031	5,652	1,471	361	11,515	11,515
Sundries	.....	.....	.....	2,550	2,550	1,023	3,141	2,748	2,822	9,734	12,274
Total	514,534	162,958	242,541	185,894	1,105,927	550,330	80,684	83,876	262,329	977,219	2,083,146
Iquitos, direct	2,457	.....	610	6,967	10,034	68,198	6,420	31,383	125,705	231,706	241,740
Total, January, 1912.	516,991	162,958	243,151	192,861	1,115,961	618,528	87,104	115,259	388,034	1,208,925	2,324,886
Total, February, 1912.	693,997	113,367	224,019	132,277	1,163,660	754,036	128,176	145,464	319,297	1,346,973	2,510,633

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TOO MUCH WAR FOR GUAYULE.

The Guayule factory of the Continental Rubber Co. of New York at Torreon, Mexico, which closed down on February 17, owing to the very unsettled condition of the country, resumed operations again last week. During the six weeks when the factory was closed, all railroad communications were stopped and all telegraphic and mail connections were practically cut off; but the company reports that no harm has been done, either to its property or to any of its employes.

The profit-sharing plan which has been under consideration by the United States Rubber Co. for some months has not yet been officially announced, although its announcement is promised within a very short time. Some references have been made to this plan in the daily press and descriptions given of it, but none of them were authoritative or contained all the features which it is said the plan will embody.

Antwerp.

RUBBER STATISTICS FOR FEBRUARY.

DETAILS.	1912.	1911.	1910.	1909.	1908.
Stocks, January 31..*kilos*	586,056	645,419	482,162	597,777	1,260,009
Arrivals in February...	466,303	236,316	514,624	300,011	277,443
Congo sorts	331,775	172,078	454,116	184,360	255,000
Other sorts	134,528	64,238	60,508	115,651	22,443
Aggregating 1,052,359	881,735	996,786	897,788	1,537,452	
Sales in February.....	530,403	342,528	480,252	566,355	630,348
Stocks, February 28....	521,956	539,207	516,534	331,433	907,104
Arrivals since Jan. 1....	787,736	786,272	776,491	583,966	825,411
Congo sorts	558,023	575,499	656,663	370,549	759,451
Other sorts	229,713	210,773	119,828	213,417	65,960
Sales since Jan. 1.....	940,518	835,277	801,469	848,268	925,201

RUBBER ARRIVALS FROM THE CONGO.

FEBRUARY 27.—By the steamer *Leopoldville:*

Bunge & Co	(Société Générale Africaine) *kilos*	89,900	
Do	(Chemins de fer Grand Lacs)	7,800	
Do	(Comptoir Commercial Congolais)	11,300	
Do	(Cie. de Kasai)	68,300	
Do		170	
Do	(Equatoriale Congolais)	870	
Société Coloniale Anversoise	(Cie. du Lomami)	8,200	
Do	(Haut Congo)	4,100	
L. & W. Van de Velde	(Comfina)	21,000	
Do		3,500	
Charles Dethier	(American Congo Co.)	3,400	
Willaert Freres		8,000	
Comptoir d'Irebu		300	226,840

Plantation Rubber from the Far East.

EXPORTS OF CEYLON GROWN RUBBER.

[From January 1 to February 19, 1911 and 1912. Compiled by the Ceylon Chamber of Commerce.]

	1911.	1912.
To Great Britain .....*pounds*	389,715	883,110
To United States	251,455	287,856
To Belgium	38,694	209,827
To Germany	3,648	13,132
To Austria	.....	2,392
To Canada	.....	2,242
To Japan	7,135	2,181
To Norway and Sweden.....	.....	39
To Australia	6,518	.....
Total	697,165	1,400,779

[Same period 1910—345,410; same 1909—143,341.]

TOTAL EXPORTS FROM MALAYA.

[From January 1 to dates named. Reported by Barlow & Co., Singapore. These figures include the production of the Federated Malay States, but not of Ceylon.]

FROM—	1910.	1911.	1912.
Singapore (to Jan. 31).....*pounds*	252,551	664,995	973,006
Penang (to Jan. 18).....	291,166	210,737	371,639
Port Swettenham (Jan. 31).....	767,182	1,531,350	1,546,960
Total	1,310,899	2,407,082	3,891,605

Rubber Scrap Prices.

LATE NEW YORK QUOTATIONS.—Prices paid by consumers for carload lots, per pound—are in some cases slightly higher.

	April 1.
Old rubber boots and shoes—domestic	9½@ 9⅝
Old rubber boots and shoes—foreign	9¼@ 9⅜
Pneumatic bicycle tires	4½@ 4¾
Automobile tires	8½@ 8⅝
Solid rubber wagon and carriage tires	9¼@ 9¾
White trimmed rubber	11 @11½
Heavy black rubber	4¾@ 5
Air brake hose	4¾@ 5
Garden hose	1¼@ 1⅜
Fire and large hose	2 @ 2¼
Matting	⅛@ 1